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LETTERS

Progress Noted

In her article "Prison Libraries" [*Special Libraries* 67(no.1):1–7 (Jan 1976)] Jean Marie Zable has written an overview, not of the present condition of libraries in prisons, but of articles published on that subject.

The implication of Zable's article is that little groundwork has been laid in state correctional institution libraries, when actually, an in-depth investigation would have indicated that in Massachusetts alone, since Title IV (a federal grant funding to the state library agencies in 1966) approximately $238,835 has been expended on resources to establish prison libraries under the Department of Corrections.

Currently four of the five adult correction institutions in Massachusetts have or are building general and legal library collections. They are staffed by professional librarians working to develop materials and programs suitable to meet the needs of prisoners. We are also attempting to draw in and utilize the resources of the community educational and institutional organizations, so that the prisoner will benefit from as many available materials as possible.

This year, we have awarded grants of approximately $50,000.00 to four adult correctional institutions in Massachusetts, where librarians have been hired and libraries established. These grants will be expended on books (paperback and hardback), magazines, newspapers, and audiovisual equipment (records, tapes, films, film strips, slides, etc.)

Library service to prisoners is an important part of the rehabilitation process. Establishing ongoing library services and programs has been difficult and challenging at times, but the groundwork has been laid and a network of institutional libraries is being established in Massachusetts.

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Protest

The *John Wiley & Sons's Librarian Newsletter* recently announced L. J. Bellamy's book *Advances in Infrared Group Frequencies*, vol. 2 (0-470-06410-2). We ordered one copy of the book through our book dealer, Technibooks, Cincinnati, Ohio. When we received the book, we found that what we had ordered was a reprinting of the book we already had in our library stacks. The only difference was in the name of the publisher and the date of publication. The table of contents, the pagination, the index were the same. In spot checking the pages—first and last words on the pages were the same. The jacket of the book shows that the book in question is volume 2 of *Infrared Spectra of Complex Molecules.* Up to 1975 there had been no tie-in between the two books other than their common author, Bellamy, and the original common publisher, Methuen. Since *Advances in Infrared Group Frequencies* was originally published in 1968 and John Wiley's literature said volume 2, the natural assumption, particularly with the title involved, would be that volume 2 was an extension of volume 1 covering the years between 1968 and 1975.

I do not know whether there have been other incidents of this type before or not. But I do think that librarians should be made aware of this type of problem. When a librarian manages a small library, the facilities, the time or the man-power for doing any indepth research on a new book listing are limited. We have to depend on the honesty and integrity of the publisher and the advertising literature that some publisher issues.

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UNC-EPA Internship Presents Opportunity for Students

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■ The U.S. Environmental Protection Agency has a contract with the University of North Carolina School of Library Science for support services in the operation of the EPA Library. The contract is carried out through an internship which permits up to 10 students at a time to experience the various phases of special library work. Tying in the job with the educational program is a UNC seminar based specifically on the library. The internship serves as an example of innovation in the library school curriculum and in special library staffing.

A LEADING research scientist in the field of microchemistry finally is able to obtain quickly the massive quantities of reports and reprints necessary to stay abreast of current research. The student of library science is given the chance to move beyond the classroom walls to gain firsthand knowledge of the intricacies of handling government reports and the ins-and-outs of providing speedy scientific information. Coordinating the information needs of the environmental researcher with a practical, responsible learning experience for the library school student is the goal of a unique contract between the University of North Carolina School of Library Science and the U.S. Environmental Protection Agency's Office of Administration (OA) in Durham, N.C.

The OA provides administrative and support service to the Environmental Research Center which is located in Research Triangle Park about 10 miles from both Durham and Chapel Hill. The EPA facilities in North Carolina constitute the largest center of EPA field operations. The library, situated in Research Triangle Park, serves OA, the Office of Research and Development, and the Office of Air Quality Planning and Standards. It is one of the largest libraries in the EPA Library System which is composed of some 28 libraries spread across the country *(1)*. It was after careful planning and negotiating between OA's Information Services Division and the UNC School of Library Science that the contract went into effect in May 1974.

The UNC-EPA contract established a Library Intern Program which allows for up to 10 library science students at a time to provide the skills and manpower necessary to carry out the day-to-day operations within the EPA Library. Administrative decisions and policy are made by the head librarian and her assistant, and supervision of the students is provided by a full-time on-site supervisor under the general direction of a member of the UNC faculty. In the two years of its existence, 21 students have taken part in the project. What makes this

program unique is that the students as a group have the responsibility of handling all phases of special library work. Each student is required to work 20 hours per week and is assigned to a specific task or group of related tasks for a period of 3 or 4 months, corresponding to a semester at the school. After completing one assignment, such as interlibrary loan, the student moves to another job, such as technical processing. This aspect is a strong point from the educational angle.

Student Assignments

During the year-long internship at the EPA Library, a student gets to work in at least 3 positions. These include any of the following: circulation, interlibrary loan, cataloging and documents processing, translations processing, serials, and computerized information searching. Reference work is an important part of the student's educational experience; each student shares in having the reference desk covered at all times. While a beginning student often has to refer the questioner to more experienced personnel, after a month or so he can find the answers to most questions by himself.

The number of interns assigned to a job at any one time varies according to the job. As a special library serving some 1,200 local patrons, most of whom are researchers in the field of air pollution control, the principal task at the EPA Library is obtaining interlibrary loans and photocopies. Up to four students may be assigned to work on interlibrary loan, each sharing also in the general assignment of reference service. They process as many as 1,200 requests in one month. On the other hand, the library has a small book collection, and the job of handling circulation is assigned to a student who is also involved in another activity, such as serials. The serials assignment includes checking in, shelving, and claiming for some 600 titles. A major responsibility of the student in this position is to distribute and to fill the in-house current awareness order forms. Keeping the scientists up to date on articles in journals held by the library is the aim of this service.

The collection of government documents and other reports is of prime importance in the EPA Library. Over the period of a year, the UNC students have devised a practical system for cataloging these reports and have coded and input more than 3,000 non-EPA-sponsored reports to a computerized file. Due to the need for moving large numbers of reports from storage to the shelves where they could be used, a brief but efficient classification system had to be effected. Since by experience it was known that the patron trying to locate a report most often knew the corporate source (and sometimes only that much), the decision was made to base the shelving classification numbers on abbreviations of the corporate authors followed by abbreviated title words. In this way the user could locate reports while the actual cataloging data, taken from photocopies of the title pages, were still being input to the computerized file. With the advent of title, author, sponsoring agency, and other types of printouts, multiple points of access were added. The cumulated monthly printout combined with available bibliographies of EPA reports and with lists of NTIS-distributed reports provide control over the approximately 7,000 reports held by the library. The student intern who processes the technical reports also handles cataloging new books. While the cataloging information is sent to a central EPA site for inclusion in a system-wide, computer-generated book catalog, the student must try to obtain the cataloging data in the first place. This often requires a trip to UNC's library to use the *National Union Catalog*.

A part of the EPA library's responsibility is to act as the central clearinghouse for obtaining translations for the agency. This assignment offers the student intern an opportunity to gain familiarity with an area little touched on in library school. First the student must check appropriate indexes to determine whether or not the requested translation has already been made. If the check is affirmative, the request is transferred to interlibrary loan. If no translation is available, the student sends the article to one of the contractors

to be translated. If it is not copyrighted, the student sends the translation to NTIS. Adding the records of EPA translations to the library's technical documents computerized catalog is another duty of the student in the translations position. About 60 translations are arranged for monthly.

In addition to gaining exposure to automated information systems through the technical reports and translations computer file, the students also have the opportunity to take part in on-line information retrieval. One of the focal points of the library is its cathode-ray-tube terminal; it is almost always in use. With training, the students perform computerized searches on MEDLINE, TOXLINE, DIALOG, ORBIT, and other systems. Since the training necessary for this job is complex, the term of this assignment is longer than the others, usually lasting 6 months. Often the student trained in searching will continue to perform some searches after being rotated to another position.

Training Provided By UNC

Coordinating the work of the student interns is the job of the on-site supervisor, employed by the school. He assigns tasks, monitors the students' work, and makes sure that rotations take place smoothly without interruption of service. He provides the training specifically needed to work in the EPA Library, supplementing the students' formal education. The role of the on-site supervisor is to translate the administrative decisions of the head librarian into practice through the students.

In addition to the on-site supervisor, there is another link between the School of Library Science and the EPA Library in the person of a faculty supervisor who is responsible for the school's administrative handling of the contract. He functions as advisor and consultant to the on-site supervisor and to the students. The faculty supervisor sees to it that high quality students join the program.

To the benefit of both EPA and the students, the internship is closely associated with the educational program of the School of Library Science. Students are ineligible to join the program until after they have finished the core set of courses (the "Block") at the school. At some point while working at EPA, the interns are required to take a seminar on special libraries taught by the faculty supervisor. The seminar lasts for one semester and is offered in both the spring and the fall. The emphasis of the seminar is not simulation but direct analysis of the real-life needs and problems of the EPA Library. The faculty supervisor draws on his years of experience to give breadth to the discussions and guidance for the required research paper. Research done by the class is usually applicable to the library, thus providing a means for in-depth studies to be made in areas pertinent to EPA. These have included such topics as an analysis of the circulation system and recommendations for improving it, the development of a multi-media orientation program for new interns, and a comparison of the coverage of various data bases in the area of air pollution.

Training in modern means of information storage and retrieval is a part of the seminar, as well as being a part of several related courses in the school. Student interns receiving training in the use of MEDLINE in courses on medical librarianship get to work on searches at EPA. Since the thrust of the research done at this site is on the health effects of pollution, MEDLINE is practically indispensible. In addition to MEDLINE, students learn how to use the DIALOG and ORBIT systems in the seminar on special libraries. This training is provided by the on-site supervisor at the EPA Library and is supplemented by practice in the form of actual searches done by the students for the scientists. Judging by the large number of reprint requests generated as a direct result of these searches, the students perform them efficiently. In this way, EPA receives the benefit of the students' learning experience, and the researchers quickly get the information they need.

Naturally, the EPA entered into the contract with UNC under the assumption that such a program would be beneficial to EPA. When the first student interns

began in May of 1974, they found a library in disarray, newly created by the merger of three collections without the addition of the associated employees. With the direction of the newly appointed librarian and her assistant and the consultants from the UNC faculty, the students were able to put the library in good order. Working together, the EPA and UNC personnel revised the serials subscriptions, weeded the book collection, and cataloged boxes of stored technical reports. A year-old backlog of interlibrary loan requests was processed, a current awareness service was established, and a reference service was organized. Due to the personal commitment of the librarian, Libby Smith, to modernizing information retrieval, the library obtained a terminal, and both EPA and UNC personnel began doing computerized information searches. Within little more than a year, all functions of the library were current.

Evaluation of the Contract

At the end of the first year of operation, an evaluation team examined the program in order to judge its success from both the UNC and the EPA points of view. Carrying out the evaluation were Sara Aull and Gary Purcell. The evaluators found, "There is no doubt that this is a rewarding program for the students working at the EPA Library" *(2)*. Not only do the students get to put into practice theory learned at school, but also they receive important guidance from the librarian and her assistant. At the same time, the program provides financial support for library school students and for curriculum enrichment. The EPA Library offers students the chance to work with the most modern means of information storage and retrieval. Aull and Purcell summarized the educational advantages of such a program as follows:

> The mix of enlightened and imaginative administrators and geographic proximity of a library school to a publicly supported library willing to accept the responsibility for such a program is indeed fortuitous. There are elements of the program which can set the pace for meaningful changes in more traditionally oriented library schools where education for special librarianship is meager and is given mainly through lectures and readings. [Other] internships are helpful but limited. The student gets valuable experience, but there is not a chance for the feedback and interaction with other students or with the Faculty as there is in this program in cooperation with the EPA *(2)*.

While the progress that has been made in the library is evident to anyone who is familiar with the condition of the library in May 1974, the evaluation team made a point of interviewing the EPA researchers themselves to find out if they had benefited from the contract. The report states

> The results of the interviews with users of the Library indicated to the evaluation team that the Library has proved to be a successful agent in expanding the subject area awareness of EPA staff members and has been a positive factor in helping the Agency to achieve its objectives. It is the judgment of the evaluation team that the service to EPA furnished by the Library is of a very high quality and that user satisfaction with that service is not illusory *(2)*.

On a more general level, EPA is also furthering its interests by acquainting numerous students with environmental and health sciences information systems that they will be able to utilize as they move on to positions in other organizations. The evaluators pointed out,

> The knowledge and expertise they gain will enrich the human resources needed to advance research in the environmental and health sciences. To this end, the EPA is making a major contribution to the educational process, is enhancing its role as a public service agency of the United States Government, and thus indirectly helps to achieve the goals of the Agency *(2)*.

To make such a program as this work well and benefit all parties requires competence and a willingness to experiment. In the case of the UNC-EPA Library Intern Program, these qualities have meshed successfully. In the words of the evaluators:

> The range of services available, the depth of service provided, the promptness and willingness of the staff to provide service readily are equal to and in many cases far exceed that service provided by similar libraries in other agencies or institutions. The evaluation

team concluded that this high quality of service is due to a combination of factors which include the service oriented attitude of the EPA Librarian, the attitude of the UNC Faculty and On-site Supervisors, the administrative support from EPA and UNC, and the availability of a group of capable and enthusiastic student personnel furnished by UNC under the terms of the contract *(2)*.

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Manual SDI:

Information Services for Interdisciplinary, Problem-Oriented Research Groups

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■ It appears that the potential for flexibility and wide-ranging scope gives manually compiled SDI services an advantage over presently available mechanically produced products. At Lehigh University the information needs of research groups have been responded to by producing ongoing bibliographies attuned to interest in interdisciplinary problems. *Energy, Food,* and *Manpower/Womanpower* are distributed monthly—each to from 50 to 80 subscribers. User participation has given each service a tailored quality which enables it to fill the research needs of individuals and yet be suitable for wide distribution. Implications for libraries are many; primarily, this type of service is cost effective, stimulates use of resources, and has resulted in the librarians' entry into the "invisible college" information network.

ALTHOUGH Bjorn Tell reserves the term "selective dissemination of information" for a mechanized system of alerting researchers to current publications of interest *(1),* the concept embraces the manually produced current awareness service specifically designed for the information needs of particular researchers or groups *(2).* Despite the continued development and refinement of computer-generated SDI systems since the initial formulation in 1959 *(3),* Tell candidly recognizes that, even when several data bases are utilized, the primary goal of achieving "a general information retrieval system of great hospitality and flexibility" *(4)* that is, a "user-friendly" system (*4,* p. 220), has not been achieved.

In contrast, although few manually produced current awareness services have been documented in the literature, some well-conceived efforts appear to have enjoyed outstanding acceptability. Several other services reveal limitations that have hindered effectiveness. A look at the distinguishing characteristics which have created success, plus a detailed examination of the new interdisciplinary current awareness services initiated by the libraries at Lehigh University, will illuminate those components which contribute to a highly efficient, attractive, and dynamic service well within the capabilities of most libraries. This study will, perhaps, also provide implications for the refinement of more sophisticated systems.

Manual SDI: the Present

F. W. Lancaster's comparative study of two current awareness services, one manually prepared, the other a product of MEDLARS, focuses upon the needs of researchers and the ability of each service to fulfill their demands *(5)*. It was determined that *Biogenic Amines and Transmitters in the Nervous System* (BA), compiled by an editor at the Brain Information Center at UCLA, was preferred by researchers over MEDLARS' *Parkinson's Disease and Related Disorders: Citations From the Literature* (PD) despite the initiation of a fee for *BA* while *PD* remained free. In fact, Lancaster discovered that "mechanized information retrieval services . . . appear to be comparatively little used" despite their accessibility to the neuroscientists surveyed (*5*, p. 260).

While interest in both publications was high, the primary dissatisfactions with *Parkinson's Disease* were its restrictive scope and its lack of provision of an easy method of obtaining relevant articles. Respondents felt access to only one data base tended to eliminate potentially valuable publications in peripheral subject areas. The interdisciplinary aspect of many research interests demands a broad coverage of the literature that single storage and retrieval systems can not satisfy.

Because the manual service scored higher than MEDLARS' SDI in all measures of effectiveness and received such an overwhelmingly enthusiastic response, Lancaster concludes that "there may still be a demand for alerting bulletins, in quite specific subject areas, compiled by a human editor selecting from a wide range of scientific literature" (*5*, p. 270).

Evans and Line, at the University of Bath, have found that in the social sciences, too, a manually compiled current awareness service offering a broad coverage of the literature was enthusiastically accepted by researchers *(2)*. Sources scanned were abstracting and indexing services, reviews and publisher's notices, *Current Contents*, and primary journals in the field. The wide-ranging coverage, plus frequent contact with researchers, led to a high percentage of relevant notifications. This personalized service, consisting of references printed on cards and sent to individual clients, was rated as "very useful" by most of the participants. Its only apparent weakness was cost. Financially supported by a grant, the service was terminated, despite its acceptance and value to researchers, when funding ceased.

Manual SDI becomes more feasible for libraries if it is designed to accommodate the information needs of a group of researchers rather than individuals. Vincent and Seals describe a current awareness service at the University of Aston in England which is a step in this direction *(6)*. Designed primarily for small groups of up to six researchers, several ongoing bibliographies are produced by the library's reference department. Wisely, the manual search process is employed only when mechanical services are not available or are considered to be unsuitable. Since the ten bibliographies which are currently being produced reach relatively few researchers and new requests are anticipated, the demands on staff time make this service concept, although highly appreciated by clientele, still unaffordable for most libraries. Cost efficiency requires that each search process satisfy the needs of a much larger number of users.

The effectiveness of manual current awareness services that attempt to duplicate mechanized SDI products has not been as pronounced. Yunis *(2)* describes a service in which a unique search profile was devised for each participating researcher and only one data base, *Index Medicus*, was scanned. Although personal interviews were conducted to match MeSH terms with user interest, the rigidity of indexing terms and the restricted scope of *Index Medicus* somewhat hindered relevant recall. The format, copies of pages from *Index Medicus*, proved to be confusing and unattractive.

The man versus machine comparative studies of Elman *(7)* and Bivans *(8)* point out the manual method's inability to compete with electronic devices when both are utilized for the same purpose and

cover relatively the same material. Here again, the two search procedures were used to produce one-for-one services, that is, a unique literature search for each individual researcher. The cost of manual searching was calculated at approximately five times that of the machine (*7*, pp. 13–16) while the higher percentage of relevant items retrieved in the manually prepared bibliographies was not considered sufficient to warrant the additional expense (*8*, p. 221). Even though up to three data bases or indexing services were scanned in the Bivans study, most clients considered the percentage of relevancy to be quite low (*8*, p. 221).

It seems evident that the object of manual searching should not be to attempt, sans machine, to provide a service nearly identical to that produced by mechanized equipment. Even when data bases are not readily available to researchers, the library can not hope, and should not attempt on a regular basis, to duplicate mechanized storage and retrieval capabilities through human effort. The studies cited above imply that the value of a manual service lies in its potential for flexibility and wideranging coverage. It is these aspects that must be exploited if the method is to provide an information package more adequately suited to interdisciplinary research needs than present machine-aided SDI products. A manual process can be free of the restrictive descriptors inherent in computerized systems and can search a large number of secondary sources rather than a few data banks. Obviously, because of costs and demands on staff time, in order for such a service to be feasible, one search process must, like *BA*, fill the needs of many clients. Applying Lancaster's criteria for the effectiveness of retrieval and dissemination systems, in addition to wide coverage, high performance also depends on the ability to recall wanted items and eliminate irrelevant "noise" (precision), the mention of items new to the researcher (novelty), and the amount of effort required of the user (*9*).

At Lehigh University the authors have attempted to design manually compiled services which are feasible in respect to library resources (data and personnel) as well as achieve a high degree of effectiveness in meeting the information needs of researchers and staff. In addition, efforts have been directed toward the design of attractive agents, requiring a minimum of time for utilization, which will advertise the library's resources to a busy clientele.

Manual SDI Services at Lehigh

The first on-going bibliography was inspired by the creation at Lehigh of an active interdisciplinary research group, the "Task Force" on energy. Since the group was created to consider approaches to the recently formulated and popularized energy problem, by the summer of 1974, no single abstracting service could be offered that would fully cover their search needs. The reorganization of *Chemical Abstracts'* energy-related references into two sections has been a move in that direction. But that service, though its coverage of the energy literature is wide, is inadequate for those approaching energy from engineering or government policy-making. In accordance with this knowledge, a temporary list of abstracting and indexing services was compiled which included not only the broad-coverage major abstracting journals (e.g., *Engineering Index, Chemical Abstracts*), but also those that treat energy topics ranging from government policy and projects (e.g., *Congressional Information Service* and *Government Reports Announcements*) to tangential environmental and resources areas (e.g., *Pollution Abstracts, Oceanic Abstracts*).

Several issues of each abstracting or indexing journal were sampled to estimate the usefulness of the journal as a source and determine the appropriate search terms or sections. The sampling also enabled us to estimate the length of preparation time needed for an issue of the planned ongoing bibliography. On the basis of this estimate, it was decided to attempt one issue of the awareness service per month, searching whatever issues of pertinent abstracting journals arrived during that month. Using the lists of search

terms, reference librarians copied relevant entries, including full bibliographic citations, and abbreviated indications of source abstracting or indexing journal, noting issue date and page or entry number. In organizing the format, it was decided to arrange entries under very general subject headings—coal, solar, wind, government action, environmental concern, and so forth—but user aid was requested in refining subject headings to facilitate scanning. To help with the document retrieval process, an indication was made next to each entry as to whether the document cited was available in the library system. For easy reference, abstracting and indexing sources utilized for compilation were listed on the cover of the issue.

Copies of the first issue were widely disseminated to the Energy Task Force, and to a large number of faculty members in the sciences, in engineering, and in the social sciences. A cut-off return slip on the cover page advertised for subscribers (now numbering about 70) and for suggestions on format, search subjects, and literature coverage. Responses were numerous, enthusiastic and thoughtful. New subject areas to explore were suggested (e.g., magnetohydrodynamics) as well as sub-areas to be ferreted out and given a special heading and attention (e.g., coal gasification). This active user participation in shaping the final form and content of the product gave it a unique, tailored quality, in tune with the research needs of individuals, but still suitable for a wide distribution. Because the service has continued to solicit such user participation, it is hoped that pertinency can be retained even after the novelty has worn away.

The success and usefulness of *Energy* prompted a request for a similar service by a University Task Force on Food formed after the Energy Task Force in the Spring of 1975. Because faculty interests in food were less well-known to the reference staff than had been their interests in energy previous to the formation of the Energy Task Force, Food Task Force members were contacted and asked to sketch in a paragraph their present and potential interests in the food issue (other than personal consumption), and to mention particular kinds of documents and sources that they felt ought to be included. Their responses exhibited a curiosity about novelty and futurism—an interest in new food sources, changing food habits, predicting food supply and demand, and in malnutrition. The replies suggested, as well, extreme diversity of interest among the researchers, and the need to tap, if more selectively, an even wider data base than was required for *Energy*. Faculty reaction to the first and second issues of *Food* (subtitled *The Digest*) played a major role in reshaping the subject arrangement, scope, and sources to be scanned. An unexpected interest in aspects of nutrition surfaced to receive more attention, but more important has been the increasing concern over questions of national and international food policy. The sources searched regularly now include not only *Biological Abstracts, Chemical Abstracts,* and the *Biological* and *Agricultural Index,* but also, among others, *Psychological Abstracts, Index Medicus,* and *Public Affairs Information Service.* The current product, sent monthly to over fifty subscribers, with its emphasis on social and political research, differs greatly from the original, technology-geared model (Figure 1).

A third service, *Manpower/Womanpower* was created in response to a personal request from a faculty member with close ties to the administration. His interpretation of campus interest in this timely and pragmatic subject guided us in our approach for the initial issue. Because of the policy-oriented nature of the manpower problem, and because administrators concerned with practical application form a substantial proportion of subscribers, more recourse has been made to indexing and abstracting services treating federal and state documents that describe real-world projects. U.S. Department of Labor bibliographies, *Congressional Information Service, Government Reports Announcements,* the *Monthly Catalog, Monthly Checklist of State Publications, Resources in Education, PAIS,* and *Work Related Abstracts*

Figure 1.

FOOD POLICY—INTERNATIONAL

The European Community and Third World agriculture. Lettres de l'Ocipe Kasef (1974) no. 43/44, 109pp. From DOC/FI/7176. (FR). *World Ag* 17(5):1685.

+McLin, J. Western Europe and the world food problem. (Fieldstaff repts.: West Europe ser. v.9, no.6) Am. univs. field staff. *PAIS* 61(29):1.

Meier, S. Social and ethical aims in agricultural policy. *Schweizerische Landwirtschaftliche Monatschifte* 52(5):193–205, 1974. (GER) *World Ag* 17(4):1092.

OECD. Agricultural policy in New Zealand. Paris, France, 1974. *World Ag* 17(4):1101.

Simantov, A. The relationships between developed and developing countries in the food and agricultural field, or the need to promote a humanist economy. *Comptes Rendus des Sciences de l'Academie d'Agriculture de France.* 1974. 60(9):603–630. (FR) *World Ag* 17(5):1683.

U.K. Ministry of Overseas Development. British aid and the relief of malnutrition. Report of the ODA advisory committee on protein. London, U.K. 1974. 30pp. *World Ag* 17(4):1248.

FOOD POLICY—U.S.

Cochrane, W. W. Feast or famine: the uncertain world of food and agriculture and its policy implications for the United States. Rept. National Planning Association. 1974, no. 136. 25pp. *World Ag* 17(5):1897.

Johnson, D. G.; Schnittker, J. A. U.S. agribusiness in a world context. Policies and approaches for the next decade. New York: Praeger, 1974. *World Ag* 17(4):1373.

Sheets, H. Big money in hunger: a searching look at who really controls U.S. food policy (agricultural policies and commodities and dealings on the commodity exchanges). *Worldview* 18:10–15, Mar. 1975. *PAIS* 61(28):1.

U.S. Congress. Senate. Select Committee on Nutrition and Human Needs. Toward a national nutrition policy: nutrition and government. May 1975. 94–1, 67p. *CIS* 6(5): S582–10.

FOOD SOURCES—NEW AND UNCONVENTIONAL

*Bird, K. Plant proteins. Their role in the future. *J Am Oil Chem Soc* 1975, 52(4):240A–241A. *CA* 82(25):168894m.

*Birra, R.; Pontecorvo-Valhuerdi, A. New ways of utilizing soy in human diets in Latin America. *J Am Oil Chem Soc* 52(4):280A–282A, 1975. *CA* 82(23):153861z.

yield a large percentage of the citations included. Once again, feedback from subscribers prompted us to expand and refine our coverage, so that the current product is a cross-disciplinary service touching on topics ranging from sex-discrimination to human resources management and career training. Thus, *Current Index to Journals in Education, Business Periodicals Index,* and *Dissertation Abstracts* have become more important sources. *Manpower/Womanpower* is presently circulated to approximately eighty subscribers.

The success and popularity of these bibliographies is perhaps best demonstrated by the fact that several other groups have discussed the possibilities of an SDI service with us. A list for Telecommunications is currently in progress.

Production Mechanics and Problems

The production of the three continuing bibliographies to date has not caused a serious strain on staff time and resources. Three reference librarians scan issues of source journals and hand-copy entries. Reference-desk work, fortunately, requires sporadic, intense effort. At slow periods, scanning and entry-copying, which do not require undivided attention, can be done with minimal inconvenience. For each bibliography, approximately fifteen abstracting and indexing services and several primary journals in the field are scanned. The clerical staff has found that the simple and abbreviated entry forms and predictable production schedule have lessened the typing burden.

All issues are distributed free, even to extra-university subscribers. That costs of production have been entirely borne by the library caused concern initially. By circulating issues only to subscribers, by closely spacing entries and by using both sides of the page in producing the issues (now averaging 40–50 pages per month for all three), paper has been conserved, a major expenditure. However, there is no doubt that the creation of additional current awareness services could produce a real strain on personnel and budget, and decisions to embark on such will have to be made carefully. Perhaps changing

faculty interest will lead to the termination of one of the current products in lieu of another. The central aim has been to please researchers; that *Energy, Food,* and *Manpower/Womanpower* are free of charge, while subscriptions to commercial current awareness services designed for individuals are expensive, i.e., $100.00/year for *ASCATOPICS,* has certainly added to their attractiveness.

Well-known problems with abstracting and indexing services have plagued the service's products. Currency of and variation in currency among sources decreases the up-to-date quality of the SDI services, particularly after time needed for library processing, scanning, arranging, typing, and dissemination are added. An attempt has been made to minimize staleness by regularly scanning key journals and staying alert for special issues of journals devoted to present popular topics (e.g., the recent *Science* issue devoted to food and the issue of *Annals of the American Academy of Political and Social Science* entitled, "Planning for Full Employment"). Abstracting services do vary widely in their currency. This has created the annoyance of duplicate entries culled from different sources at different times. Master entry files, maintained by clerical staff and checked before the production of each new issue, now eliminates duplicates.

Problems with User Access to Listed Materials

Because the service is intended to widen the range of literature with which researchers may become familiar, the current bibliographies include many citations of material in non-Romance languages (Czech, Japanese, etc.) and of material that the library does not own. The symbols that prefix entries to indicate library availability have spared some disappointment. With the aid of the correct citations and source verifications which the bibliographies provide, materials not owned can be more rapidly and easily obtained through interlibrary loan, NTIS, and letters to issuing agencies. This information also can hasten the acquisitions process through the order department. Still, the complexity and waiting time caused by these procedures renders them less than satisfactory to many users.

However, great satisfaction in document retrieval can be provided for those items owned by the library. Issues of the ongoing bibliographies are mailed to individuals who scan them at their leisure. Requests for books, periodicals, interlibrary loans, and acquisitions can be made over the telephone since all information needed to complete any of these transactions is included in the bibliographies. This aspect of the service represents a step toward a viable outreach program, and the libraries would like to see it utilized more heavily as users become accustomed to the comfort.

Particularly in the case of *Energy,* it has been found that the technical and often specialized materials included to make the lists useful to researching faculty, albeit in a wide spectrum of scientific fields, renders the service too sophisticated for the largest group of library users, the undergraduates, who are also considering energy questions. However, they do not really need the currency of references required by active researchers, and the annual collections, such as the *Energy Index* and published subject bibliographies prove more satisfactory. As the files grow, the librarians hope to encourage their nascent interest in the other two services which contain much less sophisticated material.

The Ongoing Bibliographies and the Research Effort

The unique appeal of these services is that they include carefully selected references drawn from a wide data base that covers the literature of a research problem of wide, interdisciplinary scope. They are designed to be a basic resource for a group of scholars who are, for a finite period of time, intensively and cooperatively focusing on that problem. Consequently an attempt is made to follow the pulse of each research group and its component individuals and to adapt bibliographies accordingly.

Dougherty and Blomquist have determined that faculty research interests

tend to change markedly and rather quickly *(10)*. Perhaps a prime motivator of such change is grant allocation (and cessation). At Lehigh, as at other institutions, researchers tend to cluster in groups funded by grants which often span a year or at most a few years. *Topicality,* too, always has its allure. As de Geus states, "the interest in what is *new* carries one into the antinomy that one can never know today the problem requiring attention tomorrow." One role of the information specialist is to "anticipate and help to anticipate" *(11)*.

When interests change, the subject emphases of bibliographies can and should be immediately altered since compilers have complete control over the aspects of each subject to be covered and the range of information scanned. In this manner, the services can be tailored to answer the information needs of a large number of diversified personnel both on and off campus over a protracted period of time.

Implications for Libraries

Several by-products of benefit to libraries are evident. Most obviously, the bibliographies plus the resultant demand for listed publications become effective tools for collection development and for the evaluation of new indexing and abstracting services. General areas in which the collection is weak but in which research interest is growing can be discovered. At a time when any new subscription represents a real, often unpredictably large investment, estimates of the potential use of new journals which frequently appear on the bibliographies can be intelligently made from the number of requests for articles from those journals. As national interest in the rather popular areas we are presently covering—Energy, Food, Manpower—continues to grow, abstracting and indexing services are appearing that represent potential candidates to supersede these services. Whether the coverage of a new product is geared to the needs of clientele can be rapidly determined, since the scope of the in-house service will serve as a basis for comparison and an evaluative model. In today's budget squeeze, libraries must carefully consider the allocation of substantial funds for the purchase of information, whether in hard copy or data bank form, and of secondary services that may support research interests today but could be ignored in a short time.

Compilers/reference librarians develop a strong familiarity with the information resources of an interdisciplinary research area. Therefore, service is characterized by more expertise and an accuracy in retrieving desired information that comes from being "on top" of the literature. Librarians can also be of greater assistance to a wide spectrum of student and faculty library users who are not subscribers to the services but who must, in their studies, at least touch upon the critical problems of food supply, energy, and manpower.

It should be stressed that in this case subject (or "problem") expertise developed with the services, not prior to their inception. The authors feel that specialists are not necessary to the production of specialized bibliographies. Initiative, imagination, a sense of organization, and a passing familiarity with the information resources of many fields are the attributes needed by a compiler. This opinion is shared by Evans and Line whose information service in the social sciences, compiled initially by a subject specialist then by a "library-trained" individual offered a unique opportunity to evaluate the effectiveness of each as an "information officer." They concluded that "bibliographic knowledge is more important than special subject knowledge" (*2,* Evans & Line, p. 225).

Since many universities are faced with the problems of diffusion in a decentralized library system, the interdisciplinary aspect of this type of service can prove to be worthwhile. The bibliographies coordinate and also advertise the total information resources of the institution to researchers who may, by habit and because of proximity, be acquainted with only one division in a library system. By drawing upon the collections of both main libraries at Lehigh, SDI services have drawn attention to vital sources of in-

formation which many researchers, because of unfamiliarity, may not have independently discovered. The utilization and popularity of U.S. government publications, especially, have increased substantially. The bibliographies also serve as advertisements for the research capabilities of the library staff. On request, retrospective bibliographic work has been done on certain topics currently covered by the services.

Dougherty, Blomquist, Lancaster, and de Geus, in the sources cited above, all emphatically emphasize the importance of a simplified, rapid method of document delivery as a component in any information system. The success of *Current Contents* and *ASCATOPICS,* despite their cost, appears to be largely due to their OATS (original article tear sheet) service and, for *ASCATOPICS,* the inclusion of author's addresses. While an indication of the location of items held within the library system at Lehigh is included, access to publications not owned here does present problems. It cannot be denied that in the design of more sophisticated services, document delivery must be given high priority. In fact, as Dougherty and Blomquist have noted, satisfaction with a library system is strongly dependent on the library's ability to produce a particular document quickly when requested (*2,* pp. 82–83).

Entry into the Invisible College

The most valuable result of the production of these bibliographies for us, the librarians, has been entrance into the "invisible college" information interchange network. Instead of being merely the passive storers and providers of information who only contribute rather than participate in the information cycle, as illustrated by Redmond, et al. *(12),* the librarians are a dynamic and at best a catalytic element in the network. Feedback on these services has indicated that they have stimulated intellectual curiosity especially toward areas somewhat tangential to present research interests. Essentially, the library has become a partner in the informal communication network so crucial to information flow in the research process. Contact with researchers has increased considerably and they have begun to consider the librarians as specialists in the information needs in their area. This confidence and respect has been gained by demonstrating a proficiency in information seeking strategy and the design of germane, current, usable information packages. Having received requests to be placed on the SDI mailing lists and favorable comments from the American Library Association, the U.S. Manpower Administration, and from industrial firms that obtained samples of the bibliographies from us or from other researchers, tangibly illustrates that the library can comfortably enter that informal information flow. Also received, from extra-university sources, were useful bibliographies and documents as a sort of "payment" for these services.

Conclusion

Since no evaluation in the form of a user survey has yet been conducted, the assessment of the acceptance and value of ongoing bibliographies is necessarily subjective. It is too soon to validly measure the impact of these services, two of which first appeared in Spring 1975. Perhaps a follow-up statistical study will be developed in the near future. It is felt, however, that the description of this manual SDI concept plus these observations concerning reaction to it will be of interest to many libraries.

The interdisciplinary current awareness services produced by the reference department have filled an information void at Lehigh University. Concurrently they have increased use of library resources and, perhaps more important in this time when libraries must evolve from their image as storehouses into a more dynamic force, *Energy, Food,* and *Manpower/Womanpower* have created a demand for and enthusiastic acceptance of innovative services from librarians. The compilation of this type of service, in terms of personnel and costs, is conceivable for most libraries. The rewards are well worth the effort.

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2. For example, the term "SDI" is used in relation to manual current awareness services in the following studies:
   Evans, Susan M. and Maurice Line / A Personalized Service to Academic Researchers: The Experimental Information Service in the Social Sciences at the University of Bath. *Journal of Librarianship* 5:214–232 (Jul 1973).
   Hall, J. / Information Services in University Libraries. *Aslib Proceedings* 24:293–302 (May 1972).
   Swanson, Don R. / Selective Dissemination of Biomedical Information: A Series of Studies and a Model System. *Library Quarterly* 44:184–205 (Jul 1974).
   Yunis, Susan S. / The Implementation, Evaluation, and Refinement of a Manual SDI Service. *Bulletin of the Medical Library Association* 61:4–14 (Jan 1973).
3. Luhn, H. P. / *Selective Dissemination of New Scientific Information With the Aid of Electronic Processing Equipment.* Yorktown Heights, N.Y., IBM Advanced Systems Development Division, 1959.
4. Tell, Bjorn / Toward Automated Multi-Disciplinary Information Retrieval. *Journal of Documentation* 30:216–223 (Jun 1974).
5. Lancaster, F. W. / A Study of Current Awareness Publications in the Neurosciences. *Journal of Documentation* 30:255–272 (Sep 1974).
6. Vincent, Ida and John H. Seals / A Manual Current Awareness Service at the University of Aston. *Aslib Proceedings* 27:247–261 (Jun 1975).
7. Elman, Stanley A. / Cost Comparison of Manual and On-Line Computerized Literature Searching. *Special Libraries* 66:12–18 (Jan 1975).
8. Bivans, Margaret M. / A Comparison of Manual and Machine Literature Searches. *Special Libraries* 65:216–222 (May/Jun 1974).
9. Lancaster, F. W. / The Cost-Effectiveness Analysis of Information Retrieval and Dissemination Systems. *ASIS Journal* 22:12–27 (Jan 1971).
10. Dougherty, Richard M. and Laura Blomquist / *Improving Access to Library Resources: The Influence of Organization of Library Collections, and of User Attitudes Toward Innovative Services.* Metuchen, N.J., Scarecrow Press, 1974, p. 72–73.
11. de Geus, Adr and Dr. Lod / Information Services for a Multi-Disciplinary Unit. *Aslib Proceedings* 26:152–165 (Apr 1974), p. 153–154.
12. Redmond, Donald, Michael Sinclair, and Elinore Brown / University Libraries and University Research. *College and Research Libraries* 33:447–453 (Nov 1972).

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A Regional Resource Directory:

Why Include Special Libraries?

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■ Existing library resource directories, and the networks they serve, are largely biased toward academic and public libraries. In order for special libraries to participate more equitably in cooperative resource sharing, a directory should include a careful subject analysis of their resources, particularly of uncataloged and informal collections. In developing the subject-indexed Pittsburgh Regional Library Center's Regional Resource Directory, a questionnaire was designed to encourage librarians to describe special aspects of their collections.

SPECIAL LIBRARIES have a long tradition of resource sharing. To a large extent, this has been among other special libraries and has been based primarily on personal contacts. Special libraries call upon public and academic libraries to fill the information needs not met by their own highly specialized collections. These libraries on occasion, in their turn, cannot meet the research needs of their public. Special libraries frequently own the books and journals needed in this research. They are usually ready to lend or photocopy and indeed welcome the opportunity to reciprocate in interlibrary loan. To facilitate resource sharing among all types of libraries and to enlarge and formalize the scope of contacts with other libraries, a resource directory can be invaluable, especially when it contains a subject analysis of resources, including uncataloged and informal collections and files.

At the Pittsburgh Regional Library Center (PRLC), members of the Users Service Committee, mostly public service librarians, believed that the collections in the immediate area were not being fully utilized because of a lack of a thorough knowledge of the holdings of local libraries. Not only was knowledge of the strengths of book collections needed, but also information on any unusual materials, no matter how small the holdings, any uncataloged materials and information on any special files. (One example is the quotation file at Carnegie Library of Pittsburgh.) Information on periodical holdings was already available, as one of the projects of PRLC was the *Pittsburgh Union List of Periodicals.*

Since there already were several directories which included Pittsburgh and Western Pennsylvania, the committee examined them to determine whether a

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resource directory would be an unnecessary duplication of existing data. Of course, the *American Library Directory* includes all PRLC members and other libraries in the region, but the description of holdings is brief; there is no subject index; and there is no convenient way to identify members. The Kruzas' *Directory of Special Libraries* is similarly broad in scope although confined to special libraries. On the local level there were already three directories, but these were all too restricted and lacked details: The *Pittsburgh Chapter Special Libraries Directory, Where-To-Turn,* a directory of social service agencies, and *Pittsburgh Market Directory.* After thoroughly examining all these directories, the original premise was confirmed: There was no single convenient tool to determine possible places to find information in the area.

The committee decided not to start from scratch, but to use the directory of members of the Pittsburgh Regional Library Center. The beginnings of the PRLC listing go back to the late 1960s when a need to acquaint members with each other's photocopy policies led to the assembling and distribution of such data. At the time the center's members were all academic with the exception of the Carnegie Library of Pittsburgh and were all located within the immediate Pittsburgh area. Gradually a directory of members evolved which included address, size of collection, hours, and borrowing regulations. Subject strengths was one of the items of information requested, but usually these statements were quite brief. There was no index, thus making the directory awkward to use as a subject tool.

Libraries To Be Included

The committee's first step in compiling a resource directory was to elicit detailed subject descriptions from member libraries by means of a questionnaire, which requested information on size of collection, subject strengths in book and periodical holdings, special collections, special files, including reference files and clipping files, uncataloged materials, reference publications published by the library and any uncommon items. Some libraries answered in great and helpful detail; other responses were broad. This information was indexed and subject sheets were issued as a supplement to the PRLC directory as "yellow pages."

The subject descriptions and index published in Spring 1974 were well received and it was therefore decided to pursue the goal of expanding the directory to include nonmenbers, and include all types of libraries.

In 1972 the Pennsylvania Regional Library Center reached an agreement with the State Library that PRLC would be responsible for encouraging cooperation among the libraries located in the eleven county area of Western Pennsylvania. Identifying these libraries and obtaining information about them was one way of encouraging cooperation. The committee particularly wanted to include special libraries in the directory whether or not they were PRLC members. A directory listing is a step towards formalizing the traditional informal contacts and extending these contacts to librarians in all types of libraries, especially those new to the profession or to the community. Special collections in special libraries represent an important part of the total library resources of an area. The committee disagreed with Dagnese *(1)* who stated that most special libraries have little or nothing they can share with academic libraries. Perhaps the PRLC experience has been unusual, but frequently books and periodicals (not in-house files) unavailable elsewhere have been located at special libraries. Therefore, even though in some

cases collections may be small and insignificant on a national scale, they are important to a regional consortium, because they may well be the nearest contact.

The Survey

Having decided to contact as many libraries as possible in the eleven county area, mailing lists were compiled and the second questionnaire was sent out. Member libraries which had already completed the detailed subject description for the "yellow pages" were not contacted again. The questions were identical except for two additions, one on ethnic collections, and one regarding the user community served. As the questionnaires were returned, the information was edited and typed up ready for printing. A new index was created. Art work for the cover was provided by an artist in a local company, thanks to the efforts of a special librarian. *Western Pennsylvania Resources* was ready for distribution at the PRLC Board of Trustees meeting in May. Each member received a free copy. Others are for sale at $10.00.

Almost 30% of the libraries listed in *Western Pennsylvania Resources* are special libraries, excluding the special collections in academic libraries. The majority of these are industrial libraries rather than governmental or nonprofit. Gratifying as it was to have such a high percentage of special libraries, the committee is planning to contact as many additional special libraries as possible, in order to make the resource directory more complete and valuable. In addition the committee intends to ask some of those who have already responded to amplify their subject statements. One of the problems is that those with specialties assume that others are aware of the ramifications of those special subjects. It would be helpful to non-specialists to have such collections described more fully. Frequently, when librarians examine the detailed descriptions submitted by others, they become more aware of their own subject concentrations and collections, which would be "special" to other librarians and information officers.

The Need

It is believed that the directory can make a significant contribution to the sharing of resources in Western Pennsylvania. Western Pennsylvania has no union catalog, unlike Eastern Pennsylvania, which enjoys the use of the Philadelphia Union Catalog. The newly created PRLC Interlibrary Loan Clearinghouse provides locations for interlibrary loan requests of PRLC members by checking microfilmed holdings of various libraries, and in addition access to the ever enlarging Ohio College Library Center (OCLC) data bank will satisfy many interlibrary loan needs. However, there are still many libraries, notably special libraries, whose holdings are unlisted in standard bibliographic tools. When a particular book or piece of information is needed urgently, all local resources then must be exhausted. Thus a resource directory with a subject index is invaluable.

For industrial or governmental special libraries whose policy may prohibit on-site use, or even interlibrary loan, it should be remembered that frequently the only resource-sharing that may be needed is a small piece of information or a lead to a specific publication. As was noted in the second questionnaire, the resource directory was designed as a reference and interlibrary loan tool for public service librarians, and not generally for use by members of the general public. Since there is an opportunity to state regulations, there should be no fear of unauthorized borrowers over-running the special library.

The committee hopes that more librarians will adopt the philosophy of Trezza, "True cooperation is unselfish cooperation. It is never equal" *(2)*. The committee also agrees with Benson and Phillips who write, "Cooperation which makes information materials widely available should in the long run balance out in terms of services out of the library and service for the library" *(3)*. Assume that librarians can and will share their resources and meet the exceptions of this when they arise. These occasions will be few.

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CALLERY

Art Library Subject Headings System:

The Metropolitan Museum of Art

Céline Palatsky

The Metropolitan Museum of Art Library, New York, N.Y. 11377

■ The subject headings system used in the Metropolitan Museum of Art Library is designed to provide museum staff and outside scholars with an organized approach to the library's collection. The main functions of subject headings are to bring out all the aspects of the works which they describe, and to be highly relevant to the material to which they pertain. Even though the LC Subject Headings List and Art Index are referred to before new subject headings are established, they are not adopted unless they fit harmoniously into the existing system. The basic principles which govern the system of subject headings are outlined and their structure is explained by means of specific examples.

THE HOLDINGS of the Metropolitan Museum of Art Library, which amount to 200,000 books, reflect the encyclopedic collection of the museum. As one of the great art research centers in the world, the library is primarily intended for the museum staff, but it also attracts scholars from around the world. Because these readers are interested in a topical approach to their research, the subject headings used in the library are designed to provide them with an organized access to the library's special collection, devoted to art and its related fields.

The main catalog of the MMA Library follows a dictionary arrangement. A separate catalog is maintained for auction catalogs. In addition to representation in the main catalog, special card files have been established for materials, such as *catalogues raisonnés* and facsimiles.

Basic Principles

The four main principles which determine the subject headings system in the MMA Library are the following: 1) All works cataloged in the library are assigned subject headings. 2) Subject headings must bring out all aspects of the work to which they pertain. 3) They must be highly relevant to the materials they describe. 4) Normally, they are established in the English language. When applied to specific situations, these principles work as follows.

The first principle requires that a subject approach be provided to all materials cataloged in the library. Whereas the Library of Congress does not assign subject headings to all works, in the MMA Library at least one is established to reflect properly the contents of the work (Figure

Figure 1.

Art—Addresses, essays, lectures.

189M83
M834 **Morris, William,** 1834–1896.
The unpublished lectures of William Morris. Edited and compiled by Eugene D. LeMire. Detroit, Wayne State University Press, 1969.

331 p. 24 cm. 9.95

A revision of the editor's thesis, Wayne State University.
"A bibliographical checklist of Morris's speeches and lectures": p. [291]–322.
Bibliographical footnotes.

I. LeMire, Eugene D., ed. II. Title.

PR5072.L4 1969 825'.8 69-19307
SBN 8143-1394-9 MARC
Library of Congress [2]

Figure 2.

108.1B79
In 88 **Brooklyn Institute of Arts and Sciences.**
Museum.
American interiors, 1675–1885; a guide to the American period rooms in the Brooklyn Museum [by] Marvin D. Schwartz. [Brooklyn, 1968]

vi, 114 p. 97 illus. (20 col.) 23 cm.

Bibliography: p. 107.

1. Interior decoration—U. S. 2. U. S.—Historic houses, etc. I. Schwartz, Marvin D. II. Title.

NK2002.B7 747.2'3 68-57682
Library of Congress [3] MARC

Figure 3.

Art—America—Collection.
Decoration, Interior—U. S.
Decoration, Interior, Colonial.
Furniture, American—17th–19th cent.

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1). Subject headings are typed in red and are filed in front of main entries with identical forms. Such a method of filing facilitates the subject concept of research which most users favor.

The second principle is that subject analysis be thorough. Because art is the most important topic in the MMA Library, often a greater number of subject headings are assigned to a work than would be the case in a large diversified library, where art is treated on an equal basis with all the other disciplines. For example, where in the Library of Congress two headings were deemed sufficient to describe a work, four were used in the MMA Library for the same book (Figures 2, 3). One instance in which only one heading is assigned to a work is when artists are treated as subjects. In that case their surnames and initial(s) are indicated in the subject entry. This abbreviated form is possible because for each artist appearing in the main catalog, a guide card is compiled with the following information: family name, sobriquet (if any), given name(s), date(s), nationality and medium (or media). Guide cards are filed in front of subject cards for each artist to whom they pertain (Figures 4, 5). Exceptions are made if two or more artists have the same family and first names, as in the case of a father and son. For example, for Hans Holbein, the Elder, and Hans Holbein, the Younger, full names and dates are written out in the subject headings for each of these artists to avoid any possibility of confusion.

The third principle provides that new subject headings be consistent with other entries in the main catalog, and at the same time that they be relevant to the material they describe. Therefore, even though the Library of Congress Subject Headings List and Art Index are referred to before a new subject heading is established, it is adopted only if it fits harmoniously into the existing system and can be used effectively by the readers. For example, Gilberte Vezin's work "L'Apocalypse et la fin des temps," published in Paris, in 1973 by La Revue Moderne, treats of Egyptian and Asian influences on the Apocalypse. The two LC subject headings for this work read as follows:

1) Apocalyptic art—Egyptian influences

2) Apocalyptic art—Oriental influences.

They could not be used since, in general, subject entries in the MMA Library begin

Figure 4.

179B19 Baldung, H.
K14 Karlsruhe (Ger.)—Badische Kunsthalle.
Hans Baldung Grien, Austellung unter dem Protektorat des I.C.O.M., July 4–Sept. 27, 1959. [Karlsruhe,Müller,1959]
401 p. incl. 276 illus., 64 pl. 24 cm.
Colored cover illustration.
Bibliography: p.27–32.

Figure 5.

Baldung, Hans c1484–1545.
(Called Grien)

German painter, engraver & draughtsman.

Figure 6.

103.4P21 Bouchardon, E.—Equestrian statue of Louis XV
L946 Paris—Louvre—Dept. des peintures, des dessins, et
no52 de la chalcographie.
La statue équestre de Louis XV, dessins de Bouchardon, sculpteur du roi, dans les collections du musée du Louvre; LII[e] exposition du Cabinet des dessins 13 jan.—30 avr. 1973. [Catalogue par Lise Duclaux. Paris] Éd.des musées nationaux,1973.
47 p. 16 pl. 25 cm. (Its Exposition [catalogues] 52)

Cover illustration.

Figure 7.

Paris. Musée national du Louvre. Cabinet des dessins.
La statue équestre de Louis XV: dessins de Bouchardon, sculpteur du roi, dans les collections du Musée du Louvre. LII[e] exposition du Cabinet des dessins, Musée du Louvre, Paris, 13 janvier—30 avril 1973. [Paris] Éditions des musées nationaux [1973]
47 p. plates 24 cm. 15.00F F•••
"Exposition et catalogue par Lise Duclaux."
Bibliography: p. 41–[43]
1. Bouchardon, Edme, 1698–1762. 2. Paris. Statue équestre de Louis XV. 3. Artists' preparatory studies—Exhibitions. I. Duclaux, Lise. II. Title.
NC248.B585P37 73-329754
Library of Congress 73 [2]

with nouns and not adjectives. Furthermore, the meaning of the adjective "apocalyptic" is sometimes construed, in a figurative sense, as a synonym of disastrous, and "oriental," besides being vague, often suggests the Far East. For the purpose of the MMA Library both headings were amended as follows:

1) Apocalypse in art—Egyptian influence

2) Apocalypse in art—Asian influence.

The fourth principle specifies that, with the exception of proper names and popularly accepted designations, subject headings be established in English, and not in a foreign language. Therefore, while headings such as

Vinci, Leonardo da—Paintings—
Ginevra dei Benci

and

El Greco—Mater dolorosa

are used in the MMA Library, one of the subjects assigned to the exhibition of Bouchardon's drawings of the equestrian statue of Louis XV, held at the Louvre in 1973 reads (Figure 6).

Bouchardon, E.—Equestrian statue of Louis XV

and not

Paris. Statue équestre de Louis XV

which is the heading assigned to the same work by the Library of Congress (Figure 7).

The subject heading in English is then added to the "see also" references, under "Statues, Equestrian" (Figure 8). Foreign terms are used only if they are integrated into the English language and are easily identified by readers, e.g., "Petit point," or "Repoussé work" (Figure 9).

Subject headings are related to each other by means of "see" and "see also" references. The "see also" reference is an extremely important feature in the library, and one that is used with great consistency throughout the main catalog. Its function is what Charles Cutter called "syndetic," in that it binds all related headings together. What is even more important, it provides complete lists of particular entries to which readers may refer for precise topics. The "see also"

Figure 8.

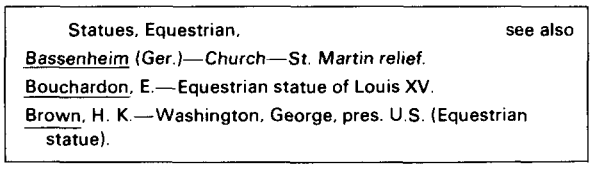


Figure 9.

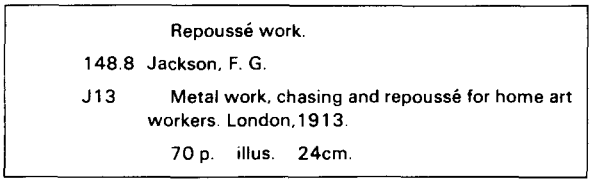
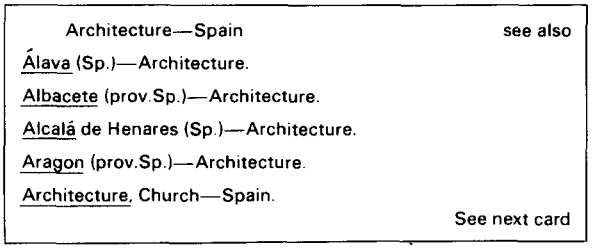


Figure 10.



• •

reference is especially useful for bringing together local geographic subdivisions. Whereas art media are subdivided by countries, smaller geographic entities, such as states, provinces and cities, take the direct and specific approach; that is they form the main element of the heading and are subdivided by art media. The "see also" reference under each country records every location in that country about which the library has any available material (Figure 10).

To give an idea of the extent of certain "see also" references, the one under the heading of "Art—Germany" lists 360 entries, and offers a truly complete picture of all the material available in the library on that subject.

Structure of Subject Headings

Subject headings are usually organized around various art media. Their structure can be best analyzed by taking as examples art collections and art exhibitions.

Art collections are assigned different subject headings according to whether they are public or private. *Public collections* are given subject headings which bring out the following elements, whenever appropriate:

1) Media, e.g., Tapestry,
2) Provenance, if known, e.g., French,
3) The fact that it is a collection, Collection,
4) Location, if the above collection were located in the United States, we would have a subject heading reading:

Tapestry, French—Collection—U.S.

Private collections are often more than one media; their provenance is from varied origins, and their locations are not always known. Therefore, this information is omitted. Instead, they are entered under the name of their owner. The full name of the collector, his/her dates, if known, and the word "Collection" are included in the heading. For example:

McCann, Helena Woolworth, —1938—Collection

When a private collection has been acquired by a museum, either through gift or purchase, it is treated as a public collection in a museum. If it is still known by its original name, it is entered under that name as a subhead of the institution to which it now belongs (Figure 11).

A "see also" reference is made from the private collection to the new entry, under the institution (Figure 12). A "see" reference also is made from the name of the public collection to the institution where it is presently housed, for example:

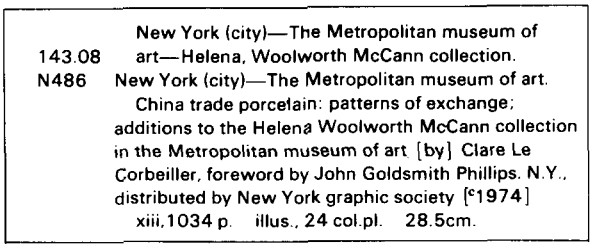
Helena Woolworth McCann collection, see

New York (city)—The Metropolitan museum of art—Helena Woolworth McCann collection.

Art exhibitions are assigned subject headings which reflect the following characteristics, whenever appropriate:

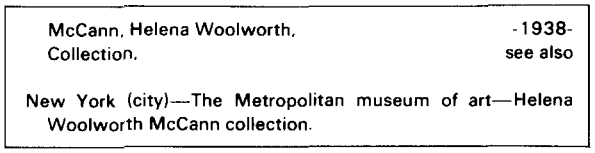
1) Media, e.g., Drawing,
2) Provenance, if known, e.g., Italian,
3) Period, if known, e.g., 19th cent,

Figure 11.



New York (city)—The Metropolitan museum of
143.08 art—Helena, Woolworth McCann collection.
N486 New York (city)—The Metropolitan museum of art.
China trade porcelain: patterns of exchange; additions to the Helena Woolworth McCann collection in the Metropolitan museum of art [by] Clare Le Corbeiller, foreword by John Goldsmith Phillips. N.Y., distributed by New York graphic society [©1974]
xiii,1034 p. illus., 24 col.pl. 28.5cm.

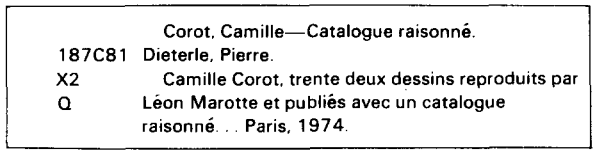
Figure 12.



McCann, Helena Woolworth, -1938-
Collection, see also

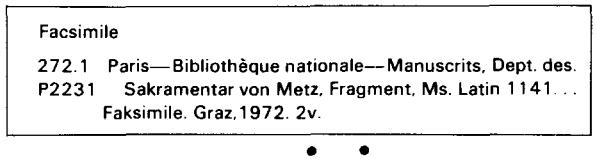
New York (city)—The Metropolitan museum of art—Helena Woolworth McCann collection.

Figure 13.



Corot, Camille—Catalogue raisonné.
187C81 Dieterle, Pierre.
X2 Camille Corot, trente deux dessins reproduits par
Q Léon Marotte et publiés avec un catalogue raisonné. . . Paris, 1974.

Figure 14.



Facsimile

272.1 Paris—Bibliothèque nationale—Manuscrits, Dept. des.
P2231 Sakramentar von Metz, Fragment, Ms. Latin 1141. . .
Faksimile. Graz,1972. 2v.

• •

4) The fact that the work is an exhibition, Exhibition. The word "Exhibition" forms the last element of the entry. Thus, we obtain a very explicit subject heading:

Drawing, Italian—19th cent.
—Exhibition

which allows for the use of only one entry, where otherwise two would be necessary:

Drawing, Italian—19th cent.
Drawing, Italian—Exhibition.

When an exhibition takes place at the Metropolitan Museum of Art, an additional subject heading is used, i.e., the entry for the museum followed by the word "Exhibition," the title, and the year. For example, the exhibition "French painting 1774–1830: the age of revolution," was first held at the Grand Palais in Paris in 1974, and then at the Metropolitan Museum in 1975. Both catalogs received the same subject heading:

Painting—France—18th–19th cent.
—Exhibition.

The catalog of the Metropolitan Museum was assigned an additional heading;

New York (city)—The Metropolitan museum of art—Exhibition—French painting 1774–1830: the age of revolution. 1975.

Because of heavy demand for material pertaining to exhibitions held at the Metropolitan Museum, such headings are filed together in a chronological sequence.

Catalogues Raisonnés and Facsimiles

Catalogues raisonnés and facsimiles are included in the main catalog under their appropriate subject headings, that is, under the name of the artist for catalogues raisonnés, and under headings that describe most accurately the text of the facsimiles. In addition, two special card files were created, grouping each of these categories together, in alphabetical order.

Catalogues raisonnés. Because of the important information catalogues raisonnés contain, they are in constant demand. Before the special card file was established for them, they could be found in the main catalog under the various artist names to which they pertained. Now, they are easily available, under a subject heading which includes the full name of the artist, followed by the words "Catalogue raisonné" (Figure 13). The card file will eventually serve as an alphabetical list for all catalogues raisonnés to be found in the library.

Facsimiles. On the occasion of the Facsimile Exhibition, held in the library in 1974, a checklist was issued under the title, "Selected Facsimiles, complete and partial, from the Library's collections." Due to the heavy demand for this publication, it was decided to establish a permanent record of facsimiles under that subject heading (Figure 14). This card file

will also eventually serve as an alphabetical list of facsimiles available in the library.

Conclusion

In conclusion, the goals of the catalog department, which has the responsibility of subject headings, are to keep the system current through continuous updating; to ensure that subject headings remain relevant to the material they represent and responsive to researchers for whom they are intended; and, at the same time, to maintain as much consistency throughout the catalog as possible.

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Minimizing Input Effort for Computer-Based Information Systems:

A Case Study Approach

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■ Organization of input, input keyboarding, and the checking of input accuracy are among the most costly parts of many computer-based information systems. A summary of suggested means for keeping such costs low, derived both from observation and from experience with student use of a broad range of programs, is offered by this paper. Suggestions include minimal use of fixed fields and explicit tagging; styling of entries for people, not computer, convenience; planning for eyeball rather than key verification; automatic error checking and entry expansion procedures; avoidance of redundancy in input and avoidance of misuse of personnel.

CLERICAL editing and preparation of input, input keyboarding, and verification of input accuracy are among the most expensive elements of many computer-based information systems. This is probably particularly true both of those bibliographic and indexing systems designed to produce printed indexes or catalogs and machine-searchable data bases.

Background

Much of the experience reported here has resulted from the use of an inter-related series of information handling computer programs written with the often extensive assistance of students and other colleagues. While these programs were originally written to meet experimental research and educational needs, many have been used for production purposes. Production uses have included a number of bibliographies and catalogs, four thesauri for different types of information systems, book indexes, indexes for several journals, a concordance, and other tools.

The use of the programs in an educational, research, and teaching environment has provided extensive experience in working with a variety of different types of data structures. Since the programs are often used by students with little or no experience with computing or with input keyboarding, it has been necessary to give considerable attention to input design.

The original focus of these efforts was on achieving comparative ease of input by

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inexperienced students, not on maximum economy of input or maximum economy in the use of computer time. Ease of input turns out, not too surprisingly, to equate quite closely with economy of input. Compared to human labor costs, computer time is inexpensive if properly used.

Preliminary Example

When work on the series of programs was begun more than a decade ago, a commonly used type of input configuration for a simple bibliographic or catalog citation might well have appeared like the following:

```
00026710RUSSCOL, HERBERT
00026720LIBERATION OF SOUND:
        AN INTRODUCTION TO
        ELECTRONIC M
00026721USIC.
00026730ENGLEWOOD CLIFFS, N.J.,
        PRENTICE-HALL, 1972
00026740315 P. BIB. DISCOGRAPHY
        INDEX
00026750789.9
00026760ELECTRONIC
        MUSIC—HISTORY AND
        CRITICISM
00026770LIBERATION OF SOUND
```

or even like this:

```
$A$RUSSCOL, HERBERT
$T$LIBERATION OF SOUND: AN
  INTRODUCTION TO ELECTRONIC
  MUSI
$2$C.
$I$ENGLEWOOD CLIFFS, N.J.,
  PRENTICE-HALL, 1972
$C$315 P. BIB. DISCOGRAPHY INDEX
$D$789.9
$3$ELECTRONIC MUSIC—HISTORY
  AND CRITICISM
$E$LIBERATION OF SOUND
```

Indeed, some input configurations look like these today, although they are usually far more complicated. It is true that the six-digit accession number in the first columns of each card in the first example were probably produced by using the *duplicate* key on all but the first card of the set, but in both examples explicit tags are keyed—numeric coding in the first example and mnemonic in the second—and fixed fields are used.

What was required for student keyboarders (and proofreaders) was something less complex, less tedious, and less difficult to proofread. At present, we would key a simple entry of this type in the following format:

```
    RUSSCOL, HERBERT THE
  LIBERATION OF SOUND: AN
  INTRODUCTION TO ELECTRONIC MUSIC
  ENGLEWOOD CLIFFS, N.J., PRENTICE-
  HALL, 1972. 315 P. BIB. DISCOGRAPHY
  INDEX 789.9
    ELECTRONIC MUSIC—HISTORY
  AND CRITICISM
```

In this example, implicit rather than explicit tagging is used exclusively, and there are no fixed fields. Lines may be broken at the end of any word. Serial numbers are computer assigned where required. An automatic capitalization routine is used to produce output entries like the following:

```
ELECTRONIC MUSIC—HISTORY AND
CRITICISM
    Russcol, Herbert. The Liberation of
  Sound: An Introduction to Electronic
  Music. Englewood Cliffs, N.J., Prentice-
  Hall, 1972. 315 p. bib. discography index
  789.9
```

Basic Keying Considerations

In considering input design for the special circumstances of using the programs with students, most of the desirable criteria were quite obvious. Maximum advantage should be taken of the ability of a computer program to post repetitive information appropriately to unit or other records and to explode unit records into appropriate entries at multiple access points. Explicit coding would be avoided whenever it was simpler in terms of input and proofreading effort to do so, as should fixed fields. It should be possible to formulate rigid but quite conventional styling rules which would provide adequate cues for the identification of data elements by program. Such styling rules should be similar to those used for styling similar entries for manual systems.

Basic Verification Considerations

Key verification, so widely used for business and scientific data, was never seriously considered. This repetitive keyboarding technique, involving complete replication of the original input keying to which it is then mechanically compared, may be justifiable where numeric data are concerned, particularly data used in arithmetical operations. Proofreading of such data requires digit-by-digit comparison of original and copy in any case. The substitution of normal (eyeball) proofreading of input and/or of a proofing copy of output is much less tedious, less expensive in terms of labor time, and sufficiently accurate for the types of data appearing in most information systems.

Two additional verification techniques have been useful, though they have never been applied as fully and consistently as would have been the case if our programs were used for long-term continuing production of one kind of tool or service rather than with widely varying types of data.

One of these techniques is to produce proofing copy from input with each data element labeled, in English, by a subroutine. By using such a sub-routine, it is easy to be sure that each data element has been properly identified by program. This assurance sharply reduces the need to proofread output, and output is far more voluminous than input in most properly designed systems. A variant on this technique, used elsewhere and experimentally programmed for us by Edwin B. Brownrigg, is to use a terminal for input in conjunction with a program which presents a series of prompts to the keyboard operator.

Another of these techniques is to build in error-detecting techniques as part of the program set. A number of such checks are used in the programs, but an economic limit to doing this has been created by the wide variety of data structures and outputs and the lack of a commitment to the production of any particular long-sustained large-scale tool or service, where extensive routines of this type are highly justifiable.

Program error detection is largely limited to catching some syntactic errors and the omission of some data elements. Experience indicates that it is best to seek to build such routines to deal with those errors which actually occur with some frequency in real input rather than attempt to anticipate the types of errors which may occur. The program routines may be designed either to correct errors where this is possible; to call possible errors to the attention of the user of the program; or to do both.

Examples for which program sections are written and used include checking for spaces after periods in author initials; checking for standard configurations of the date in imprints; checking for the presence of pagination in journal article citations; examining collations for the presence of the typical data elements of a collation; checking that page or other references in indexes are in fact integers, combinations of integers that are logical (121-2), or Roman numerals; checking punctuation and spacing of subject headings; checking syndetic terms in cross-references; and others.

For sustained production programs, programmers and systems analysts should continuously seek to add additional procedures of these kinds.

Automatic Capitalization

In the early stages of implementing these programs, upper-and-lower case terminals were not easily available to students. Keying capitalization (shift) symbols on a keypunch is not only tedious, but produces input which is difficult to proofread unless the proofing copy is produced using an upper-and-lower case train.

It is quite possible, however, to write a program routine to produce appropriate scholarly (but not library-style) capitalization by rule for bibliographic and index entries, though not for abstracts, notes, and annotations. Exceptions such as acronyms are dealt with either by keying capitalization symbols for them at input, by dictionary checking, or by post-edit-

ing—generally all three methods are available and used.

Keyboarding savings are quite considerable, but not so great as to lead to use of this technique when input is from a terminal with upper-and-lower case capability. Where keypunches must be used to input running text for concordances or automatic indexing experiments or to include notes or abstracts the first words of sentences are capitalized by program, making it necessary to use shift symbols only for proper nouns and proper adjectives.

Signs, Symbols, Abbreviations, and Entry Development

Whenever it is easily possible to use signs, symbols, or abbreviations in such a way as actually to reduce input keying effort, rather than as a means for avoiding the writing of program steps, this has been done. For example, if the person keying input becomes aware of repetitive items in the data, it is possible for him to introduce a unique abbreviation for them at any point in the data stream, knowing that from that point on the program will appropriately expand the abbreviation whenever it may appear. A recent index to a Bowker book on children's literature has, as might be expected, frequent use of the word 'children.' '#C' = 'CHILDREN' was input into the data stream, subsequently expanding entries like:

#C'S READING—SURVEYS 26

into

Children's Reading—Surveys 26

Ditto signs may be used to repeat any data element identical to the same one in the immediately previous entry. Coding is used to indicate where particular input should be expanded or developed. For example

+ BLACK ORGANIZATIONS – POLICE RELATIONS 2873

is expanded into two entries, the original minus the '+' symbol

Black Organizations—Police Relations 2873

and

Police Relations—Black Organizations 2873

Class numbers or coding may be used to substitute for subject terms on input. One student has experimented successfully with nesting such codes treated as abbreviations to be expanded as a technique for producing classification schedules with program assistance.

Similar techniques without tagging or abbreviation are used, for example, to generate syndetic reciprocals automatically—*Cats BT Felines* would automatically produce Felines NT Cats or references from inversions: *Black Power 318* generating *Power, Black See (or Use) Black Power.*

A number of these types of techniques have been described elsewhere. They can result in considerable keying savings. Where tagging or coding is used, however, verification should often be done after preliminary processing in order to avoid having to proofread symbols or looking up input data.

Analysis and programming for the identification of the data elements in the International Standard for Bibliographic Description done separately by both Joseph Knowles and Edwin B. Brownrigg indicates that our input format could be made to produce the ISBD format by program, and that the format we use requires significantly less keystroking and is easier to proofread. ISBD, of course, covers only bibliographic description, making no provision for main entry, added entries, subjects, classification, and so on.

Analysis of Existing Systems

Consideration of the input formats of some on-going systems suggests that the easiest way to immediate improvement in input format would be to accept the present input format for the system in question as the definition of the *output* format for a pre-processor program, taking in a more optimized input configuration and transforming it into the original format.

This would permit direct measurement of savings and, unlike trying to rewrite

basic programs, would avoid the possibility of costly mistakes or of production delays. Each improvement could be tested before use, and improvements could be added gradually.

At present, work is underway to do just this on an experimental basis for a large, on-going indexing system. The preliminary work already shows great redundancy in input, occasioned by the early effort to have an input configuration that would permit the programmers to get the system up and running as soon as possible and not reanalyzed subsequently for lack of time. Rising labor costs and other production problems now make better input analysis overdue.

One small example from this system may suffice: Dates are now keyed twice, in two different forms, once for human use as, for instance, JA 1, 1974, and once for machine arranging purposes as 740101 in a fixed field. The latter can easily be generated from the former by program, with reductions in keyboarding and proofreading and increased accuracy. Since this can be done by a pre-processor without changing existing programs, direct and immediate analysis of savings is possible and disruption of the existing system can be minimized.

Summary and Checklist

Full optimization of input effort may well not be worth the work involved. However, both experience with these programs and examination of the input procedures and formats of a number of large-scale on-going systems indicate that some more careful consideration of these matters can result in substantial savings.

Some important rules of thumb about points to consider are:

1) Proper use of clerical and professional staff. While it seems logical to say that professional staff should not keyboard, this may be economically justified in many circumstances, particularly if the existing alternative is having professionals hand print considerable amounts of data into little squares.

2) It is appropriate to be suspicious of the use of fixed fields and explicit tagging. Consider whether their use was for economy or ease of input, or for programmer convenience.

3) It is useful to search carefully for examples of redundancy in input: dates in two forms, or tracings repeating items given in the body of an entry such as titles or names of secondary authors.

4) The use of key verification should be carefully examined.

5) Serial numbering by keying rather than computer posting is a likely candidate for review.

6) Empirically developed error-checking routines for most common input errors are likely to be useful.

Most of these, and other, considerations can really be summed up into the suggestion that the emphasis in input configurations should be on input convenience rather than programmer convenience, and that maximum use should be made of the ability of the computer to explode input data and appropriately to post redundant information.

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The Hoosier Way to Synergism

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■ Systems and networks have been a fact of life in Indiana for several years. The Area Library Services Authority, the Indiana Cooperative Library Services Authority, the Indiana Union List of Serials, the statewide TWX network, and others are documented with emphasis on the participation of specialized libraries.

THE State of Indiana exhibits many of the usual features of library cooperation. There are the various professional associations: Indiana Library Association, Indiana Chapter of the Special Libraries Association, and the Indiana Association for Educational Communications and Technology, among others. It has libraries that are members of the Association of Research Libraries, the Associated Colleges of the Midwest, and the Library Automation Research and Consulting Association, to name a few.

However, there are library programs in the Hoosier State which are less usual. Three of these which involve cooperation among all types of libraries will be described in some detail. Three additional cooperative efforts will be mentioned more briefly. Where appropriate, mention will be made of the involvement of special libraries in the state.

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ALSA, or Regional Syndicates

Indiana is the first state to implement a program of regional cooperation which involves all types of libraries. Instead of merging similar smaller into larger service units, e.g., public libraries, the concept has been to foster syndicates of all types of libraries as a unit for greater collaboration. The syndicates may, and in fact do, include academic, school system, public and special libraries.

These syndicates are known as ALSAs: Area Library Services Authorities *(1)*. The enabling legislation requires the use of "Library Services Authority" as part of the formal name. (The state-wide syndicate is known as Indiana Cooperative Library Services Authority.) However, the name may be misleading inasmuch as the control of the ALSA is left in great measure to the participating libraries, which can leave the syndicate with minimal formalities.

The "Library Services Authority Act," passed by the Indiana legislature in March 1967, has the following purpose:

> It is the purpose of this act to encourage the development and improvement of all types of library service and to promote the efficient use of finances, personnel, material and properties by enabling governing authorities having library responsibilities to join together in a municipal corporation called a library services authority, which will provide

such services and facilities as the governing authorities party to the establishment and support of the library services authority may determine.

The Advisory Committee to the State Library on ALSAs is composed of a number of representatives including members from the five library associations in the state, one of which is the Indiana Chapter of SLA.

An ALSA is a municipal corporation composed of two or more libraries and formed according to the provisions of the Act of 1967. The library units enter into a joint agreement to provide specified library services as determined by the participants. Each ALSA will provide three required services: a program of continuing education for area library staff, interlibrary loan and a reference/referral center, and an administrative unit. Beyond these requirements, the list of services which may be provided is long and the choice is left to the members.

As of December 1974, the Indiana Library and Historical Board has approved establishment grants for five ALSAs (two areas combined to form one ALSA). Planning grants have been approved for six additional ALSAs. Thus, twelve of the fourteen areas are already involved in cooperative planning efforts.

Some special libraries participating in this program are Union Carbide Corporation: Linde Division, Detroit Diesel, several hospitals, law firms, and state and county planning agencies. The program is quite new and still trying to prove itself. An effort to recruit additional libraries to join, including more special libraries, has been undertaken. It is anticipated that the involvement is likely to grow.

INCOLSA: Indiana Cooperative Library Services Authority

In the spring of 1972, the directors of libraries of the four state universities and the Indiana State Library discussed possibilities for a study of the feasibility of a cooperative bibliographic network. This group authorized an ad hoc committee to draw up a proposal for funding such a study. The proposal contained the stipulation that all types of libraries must be considered for inclusion in the center. In this respect, any information network established for Indiana would be different from those already operational since they were limited primarily to single type libraries. Barbara Evans Markuson was chosen to direct the project. Thus COBICIL (Cooperative Bibliographic Center for Indiana Libraries) came into being *(2)*.

The year-long study beginning in October 1972 probed two main areas: 1) Is the concept of a cooperative bibliographical center viable in Indiana? 2) If it is, what is the most desirable configuration, e.g., organization, equipment and services, to meet needs in Indiana? To this end, a Task Force Committee was appointed to be widely representative of the total library community. Also, a much larger Advisory Committee served to enlarge the representation of various types and sizes of libraries and by geographical areas of the state.

In addition to a questionnaire sent to 827 libraries, contacts were made with other network groups. A demonstration of on-line use of OCLC data base was provided during the Indiana Library Association meeting in October 1973. Finally, during the study the project director and committee members wrote papers, took part in workshops and gave talks about the project throughout the state.

The final report of the COBICIL project recommended the establishment of the Indiana Cooperative Library Services Authority (INCOLSA) as soon as possible. The following potential services for INCOLSA were recommended: 1) A sound bibliographical control system for the state, compatible with existing national bibliographical standards; 2) A contract with OCLC; 3) A locally developed system to process MARC tapes; 4) A system to deal with nonbook materials, improvement of reference and interlibrary loan services, and conversion of major resource collections.

As of December 1974, one hundred libraries have signed contractual agree-

ments to join INCOLSA. Some of the special libraries are Inland Steel Research Laboratories, Miles Laboratories, and an Indianapolis law firm. The administrative and legal structure of this nonprofit organization has been established, a headquarters office opened and an executive director selected. The contract with OCLC is in the final stages of negotiation. Thus in two and one-half years Indiana has moved from concept to implementation of a statewide bibliographical network.

Indiana Union List of Serials (IULS)

The Indiana Union List of Serials *(3)* had its beginnings in 1968 with the granting of Library Services and Construction Act funds from the Indiana Library and Historical Board to Purdue University Libraries and Audio-Visual Center. This project, as with the two previously described, was to include all types of libraries in the data base. After a series of problems, a new team was organized in early 1972, dedicated to completing the project as soon as possible. The *First Cumulative Edition* was published in November 1973 and the *Supplement Catalog* was published in August 1974.

The IULS contains data from 64 libraries, of which there are 12 public, 13 special, 38 academic, and the Indiana State Library. The first edition contains over 95,000 entries and about 155,000 separate holdings statements. The supplement increased these numbers to 103,000 entries and 174,000 holding statements. It has been estimated that 95% of the serials titles (excluding technical reports and many newspapers) in the state are contained in the IULS.

Representative of the special libraries included in the IULS are the following: Miles Laboratories, three Eli Lilly installations, Union Carbide, Bell Telephone Laboratories and RCA Consumer Electronics.

Other Networks

While the three cooperative network projects discussed above have as an essential part of their philosophy the involvement of all types of libraries, there are several programs which deserve brief citation as illustrative of other types of networks in Indiana.

The Indiana Library TWX Network *(4)* is a system linking together by Teletypewriter Exchange (TWX) public libraries, the Indiana University School of Medicine Library, the four state university libraries and the Indiana State Library. The system is designed around a number of centers (larger public libraries) to which are attached satellites (smaller public libraries in the area). The satellites telephone requests for materials to the center which provides what it can from its collection. Requests unfilled by the center are referred by TWX to the State Library which screens all requests and attempts to fill them from its collections. Unfilled requests are referred by TWX either to another center or to one of the libraries of the state universities. If the request can not be filled, the State Library is notified and will try a total of three times to fill it.

The program has been operational for several years with varying degrees of success. On the whole, it works well in providing library services to the citizens of small towns. Although there are no published records of user categories, it may be assumed that special libraries, and companies without libraries, are being served through this network.

The Indiana Information Retrieval System (INDIRS) *(5)* is a computerized data base of the 1970 census as it pertains to the 92 counties and many of the leading communities in Indiana, as well as such data as voting outcomes in gubernatorial elections, presidential elections, etc. The data base is located at Indiana University. By computer terminals the Indiana State Library, 11 public libraries, 7 public school libraries, and 3 colleges throughout Indiana are linked to the base.

The project is still experimental and will be evaluated and reported on. One preliminary assessment has indicated that most of the use of the system has been by business and industry, typically representatives of industries interested in locating new plants in Indiana.

The libraries of the four state universities have a contractual agreement, based on use, to provide expedited reference and interlibrary loan services, as well as reciprocal use privileges. Recently a series of counterpart groups have been established, e.g., cataloging, science librarians, etc. The purpose of these groups is to bring together librarians with a commonality of interests to solve mutual problems. Purdue and Indiana University have microfilmed their catalogs and copies are available.

Conclusion

Interlibrary cooperation has been active in Indiana for some time. Especially noteworthy about Hoosier cooperative ventures has been the insistence on including in the various systems all types of libraries. The ALSAs, INCOLSA and IULS are prime examples of how intertype systems can work. All librarians in Indiana may join in these networks; there are no exclusions based on type, size, or location.

Also noteworthy is that all the programs described here require some type of contractual agreement, thus lending substance over and above the more usual platitudes on cooperation. The formalization of interest and intent adds vigor and determination to succeed.

While these programs have been the outcome of many forces and individuals working to bring them about, the authors would be truly remiss not to acknowledge the excellent leadership of the Indiana State Library, and especially Miss Marcelle Foote, the State Librarian. With the help of Miss Foote and her staff, Hoosier librarians may proudly proclaim that they are in the forefront of the synergistic imperative.

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BUCKLAND

A Design for a Mini-Computer Based Serials Control Network

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■ A mini-computer based serials network is discussed. Topics included are: 1) compatibility with national serials bibliographic standards; 2) utility of a "front-end" mini-computer; 3) mathematical models in system design; 4) move of update to on-line remote batch; 5) effect of modular programming on network participants; 6) special techniques of system design.

THE Washington University School of Medicine Library began operating a computer based serials control system in 1963. Since that time the system has undergone a number of modifications intended to increase its usefulness. The single most important modification occurred in 1969 when the system was reprogrammed to accommodate a number of libraries. The latest milestone in the history of the system occurred in 1973, when it was reviewed in the context of the then current state-of-the-art of computing hardware, programming concepts, and serials bibliography.

Two conclusions were drawn from that review. First, it was concluded that the network was approaching its maximum size. The program was producing approximately one-half million lines of printed output for seven medical libraries on its monthly run. The problems of printing, processing, and mailing output were causing delays as long as fourteen days from the time data were shipped to the network headquarters to the time output was received by network member libraries. The list production bottleneck was particularly serious because the network was in a period of rapid growth. Several libraries had expressed interest in joining the network and the system was being replicated by the Medical Library Center of New York.

The second conclusion drawn from the 1973 review was that the system was rapidly becoming obsolete. Development of national standards for the transfer format of serials bibliographic data by the Library of Congress and the National Serials Data Program threatened to make this data format incompatible with emerging national standards. Developments in remote on-line processing of bibliographic data in the network environment suggested that a network which combined all the utility of the PHILSOM system with the added convenience of remote access would be developed in the near future. (PHILSOM is an acronym for Periodicals Held In the Library of the School of Medicine.)

As a result of the above conclusions, decisions were made which resulted in two projects.

1) Rewrite Printing Routines. A project was undertaken to rewrite the computer programs involved in

producing printed output. The new programs would facilitate the handling of printed output and would also allow the production of bulky lists on other mediums—such as microfilm and magnetic tape. The purpose of this project (which was completed in July 1974) was to allow for continued expansion of the network into the near future.

2) PHILSOM III Design. The second project, which is reported in this paper, was the design of a completely new system for the processing of serials information, to be known as PHILSOM III.

The details of the design of PHILSOM III and even some of the major features are too voluminous to be presented here. Rather than skimming over the kinds and formats of the various outputs and operational procedures, the environment which necessitated the basic design structure, the key concepts in the design, and the implications of the design for other library network efforts will be presented.

Environment

The first step in the design of the new system was to evaluate the environment in which it would function. For purposes of this discussion, environment is defined as the set of all factors which impinge upon the system but which are beyond the control of the system's designers. Among the most significant environmental factors were the following.

Finance. In recent years it has become increasingly more difficult for librarians to obtain sufficient funds to operate their libraries at current levels, let alone increase service or perform library development. To attract prospective libraries to the proposed system it was concluded that PHILSOM III in its basic configuration must not be significantly more expensive than current systems. It must, however, be flexible enough to accommodate the demands of libraries with the resources to support on-line operation.

Data Bases. After considering a number of data base formats, including those of SERLINE and the *Union Catalog of Medical Periodicals,* it was decided to build the new system in compatibility with that of the National Serials Data Program, primarily because its key title concept was most compatible with the shelving arrangement by cover title common to most medical libraries. It is gratifying to note that the compromise reached by the MARC serials format and NSDP retains this feature.

A closer examination of the NSDP format showed that it included a number of fields necessary for catalog card production but not needed in the PHILSOM III system, and that it did not include most of the data elements necessary for close inventory control by the local library. It was therefore decided to use the NSDP format selectively. Needed data fields in the NSDP format will be augmented by those necessary for full inventory operation. Compatibility will be maintained to the extent that every data field common to both PHILSOM III and NSDP will be amenable to one-to-one computer translation.

Serials Conventions. It is our observation that the NSDP/MARC serials format is designed around the convention of processing serials records as a special case of the monograph. This convention may not have been appropriate in a manual system and it certainly would be costly in the computer environment. Fortunately, this convention is not followed in most medical libraries. Still we recognize that many libraries adhere to the principles of classification of serials and corporate author main entry, and that changing these conventions would be prohibitively expensive in terms of catalog and stack maintenance. It has been the aim of this program to try to reconcile the optimal with the conventional.

First, the system will not attempt to produce catalog cards of any kind. It is hoped that PHILSOM will eliminate the necessity of maintaining catalog card records for serials. The need to produce catalog cards requires a number of fields which are included in the NSDP format, but not included in the PHILSOM III format.

Second, because the reshelving of thousands of shelf feet of volumes of serials to make their order match that in PHILSOM would probably be prohibitively expensive, it is possible, as an extra cost option, to print some lists in other than strict PHILSOM title authority order. Thus, both direct entry and corporate entry are provided for.

Professional Environment. Practices involved in serials control vary greatly among libraries. Though in most cases the different procedures accomplish the same end, this does not mean that one set of procedures is the best for all or even most libraries; rather, differing procedures have developed in response to variations in the local environment. In the PHILSOM III design we have taken the position that local variations in methods and procedures must be accommodated to the fullest extent possible. This implies that the local librarian has complete control over, and responsibility for, all data which are unique to his library. He decides which lists are to be produced on which media and how frequently. In addition, a programming technique has been incorporated which will encourage local processing and single library special-purpose programming, so that maximum flexibility can be offered to network member libraries.

Network Environment. It is expected that PHILSOM III will be implemented by libraries with biomedical orientation over a wide geographical area. Though a larger capacity exists, it is not expected that the data base will exceed 85,000 titles, plus cross references; and that the number of libraries in the network will exceed 99. In all of these parameters the system's capability far exceeds the expected peak load.

Technical Environment. Two factors of interest were found here.

In the area of computing, there is every reason to believe that the cost of storing and manipulating data will continue to drop, with mini-computer applications leading the advance. The transmission of data over long distances by public utility lines should become easier; however, the physics of data communication suggests that the cost of such transmission per connect hour will not show a significant decrease in the near future. For PHILSOM III the implication is that extensive on-line interaction between the network headquarters and remote locations will not be an inexpensive alternative for some time.

In the area of personnel expertise, it was felt that a system which required network members to have systems analysts, programmers or computer operators on their staff would not be successful. Consequently the system is designed to be operated by network libraries without experts in computer systems.

System Interfaces

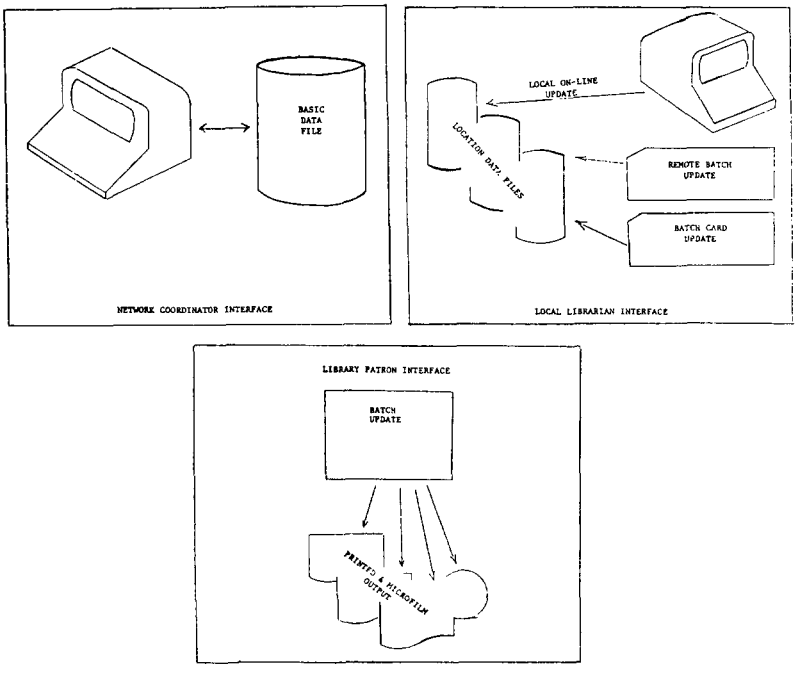
Having defined the environment in which the system would function, the people the system would serve were considered next and an attempt was made to anticipate their needs.

The Patron. The patron normally comes to the system with a fairly accurate knowledge of the journal title and issue he needs. He wants to know if the library has the item and where he can get it. We felt his interface should be direct. He should need to know nothing about system structure or search keys. His request should not have to be mediated by a staff member, and finally his interface must never be "out of order." For these reasons an alphabetical list of titles with holdings and cross references was chosen as the primary patron interface. This list may be printed or produced on microform. Other lists by subject, language, and location in the library will be available on demand.

Network Coordinator Interface. The network coordinator at the central library has responsibility for the accuracy and currency of the basic bibliographic data. Since network member libraries may access (but not change) the basic bibliographic data, the file must be current and accurate at all times. Consequently, the network coordinator will be provided with on-line access to the basic bibliographic data.

Serials Librarian Interface. Flexibility is the key requirement of the library inter-

Figure 1



face. Each library will be provided with complete control over its file of location data, which includes such things as color of binding, amount paid and where the journal is shelved. The library need enter only those data elements it needs. It must produce only those system products it intends to use and it will be charged for only as much of the systems resources as it uses. Finally, the library will be provided with alternate modes of file access including monthly batch, daily remote batch, and on-line.

All three of these interfaces are shown in Figure 1.

Concepts

The first concept of importance —alluded to earlier—is the distinction between basic bibliographic data and location data. Dividing these data types logically is important in a network for serials control. Dividing them physically turned out to be the key to the only system which would meet these specific requirements.

Location Data. The hardware configuration which would allow on-line access to location data over a geographically dispersed, thinly populated network, is becoming known in the literature as a dispersed computing network. Normally the remote library that wishes to update its location data on-line will maintain its location data file on site. Monthly, the library will send a copy of that file to the network headquarters for production of union lists and bulky printouts. Alternately the library may participate in a remote batch mode. In this mode each evening the remote library would feed the keypunched records of a day's activity into a remote card reader. The network computer would process the transactions that night, and acknowledge receipt on a teletype printer the following morning. Finally, the library with the least resources could continue to operate in the monthly batch mode, as in the current system.

The reason the dispersed computing network was selected for this model rather than the central computer network exemplified by the OCLC system, has to do with the costs of transmitting data around a dispersed, thinly populated network. The only way to justify the continuing lease cost of long distance telephone lines is to use them far more intensely than this network requires. On the other

hand, the capital investment required to obtain a mini-computer substantial enough for serials control is now within the resources of some medical libraries and the operating cost is modest. If the cost of mini-computers continues to drop faster than the cost of long distance communication, it is anticipated that the PHILSOM type network will become increasingly attractive as time passes.

Finally, a word about the file structure and programming technique of PHILSOM III. The current system accepts about 16,000 transactions and prints about 500,000 records each month. In the process, the data elements undergo a number of transformations. To make the system run as efficiently as possible (minimize transformations), the master file record has been designed to have a format similar to the most commonly printed record—a line in the union list.

However, nearly all libraries desire slight variations to the system's standard lists. To accommodate these variations a modular programming technique has been employed which allows individual libraries to substitute modules of their own design for system standard modules without penalizing other network member libraries.

Conclusion

The author believes that his experience will be of great interest to special libraries. This system is being developed because the standard conventions for serials control in medical libraries are not shared by larger university libraries. Moreover, the costs of the system development are justified if the benefits of the system are spread over a number of libraries who intensively use a relatively small common data base. Is this not the concept which underlies the existence of the Special Libraries Association—libraries with special problems and like interests working together for their mutual benefit? If this network is successful, the same concepts may be used by different affinity groups of special libraries for their mutual benefit, without regard to their geographical proximity. A cataloging network of law libraries or a selective dissemination of information network for pharmacology libraries is perfectly reasonable, and it is hoped that some of these will develop before long.

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Science in the People's Republic of Bulgaria

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THE BULGARIAN state was created in 681 A.D. by Khan Isperih, also pronounced "Asparuh,"one of the sons of the proto-Bulgarian Khan Kubrat. During her long historical development Bulgaria twice experienced spiritual and cultural flourishing about the end of the 9th and the beginning of the 10th century, and in the second half of the 14th century, when the literary and cultural values spread far beyond the boundaries to the north and northwest and penetrated throughout the lands of the Slav peoples. The cities of Preslav and Tarnovo, the capitals of the Bulgarian state during the above two epochs, became centers of an important literary and cultural renaissance, and it is there that the famous philosophers, scientists, and writers Ioan Ekzarh, Konstantin Preslavski, Cernorizec Hrabar, Patriarch Evtimij, Teodosij Tarnovski, etc., worked and wrote.

Resting on its rich and secular historical past, contemporary Bulgarian culture, and Bulgarian science in particular, is developing at unprecedented rates, due in no small way to the generous support of the state.

Bulgarian Academy of Sciences

The center of contemporary Bulgarian science is the Bulgarian Academy of Sciences, the country's supreme scientific body.

The foundations of the Bulgarian Academy of Sciences were laid before the liberation of Bulgaria from Ottoman bondage. In 1869, in the Rumanian town of Braila, Bulgarian scientists and men of letters set up a Bulgarian Literary Society, which after the liberation (1878) developed into and took the name of Bulgarian Academy of Sciences.

During the period of 1869–1944 prominent Bulgarian scientists who were members of the Academy enriched both Bulgarian and world science. During that period the Academy developed into a genuine center of scientific thought in Bulgaria; but because funds were scarce, it was not in a position to organize a purposeful scientific activity to meet the requirements of the country. It was unable to concentrate the country's scientific workers and to provide a material base for the solution of important scientific problems. The scientific achievements of that period were rather the merit of individual men of science.

Bulgarian science entered upon a stage of genuine development only after Sep 9, 1944, when conditions for work in the field of science and culture were radically changed.

The old organization of the Bulgarian Academy of Sciences and the former methods of work proved inadequate under the new conditions. It was apparently necessary to build a new organization and system to develop research work on the basis of a new methodological and world outlook and to change the social function of research. The problems to be solved in this respect were many. Gradually, however, they were solved. Today encouragement is given to Bulgarian scientists and specialists in the areas of scientific thought, research and development. Bulgarian science and its

representatives have found much support from the socialist state and the new social order in general.

Science Today

Today the Bulgarian Academy of Sciences and the entire scientific field in Bulgaria have developed. Bulgarian scientists have made valuable contributions to the national economy and to Bulgarian culture.

The most important achievement of this process has been the establishment of new structures on the scientific front on the basis of a scientifically substantiated strategy of scientific policy. At present the boundaries of the sciences in Bulgaria are largely determined by the leading areas of modern science, especially the mathematics, physics, chemistry, geology, biology, and technological disciplines. A wide opportunity for developing has been given to cybernetics, the theory of information, microbiology, computerization techniques, and the intermediary scientific disciplines, such as biochemistry, biophysics, physical chemistry, etc.

The social sciences also underwent an important development and they are now becoming a mainstay of the entire work of social management and ideological formation. We have developed almost all fields of social science and particularly the disciplines relating to specifically Bulgarian problems, as well as the new fields and trends of philosophy, sociology, demography, and history of science.

On the basis of this, the Bulgarian Academy of Sciences has created an extensive network of research institutes and other links, which corresponds to the needs of technological progress and guarantees the continued development of science itself.

Research Institutes

The Bulgarian Academy of Sciences comprises 41 research institutes, 12 central laboratories, and 12 other scientific units. Three higher educational establishments with integrated research institutes (the Academy of Agricultural Sciences, the Academy of Medical Sciences, and the Academy of Social Sciences and Social Management) have also been created. In addition, there are scores of research institutes, research and development centers, and bases for the development and introduction of the achievements of science and technology in practice, which function directly in the production field.

Approximately 66,000 persons, of which 17,500 are scientific workers, devote their efforts to scientific activities. The rapid growth of the number of scientific workers is particularly striking; from 575 in 1948 their number has soared to 17,500 in 1973.

Higher education has made great strides. While prior to the advent of the people's power, in 1944, there were only five institutions of higher education in Bulgaria with a total of 453 teaching faculty and 10,169 students, contemporary Bulgaria possesses 24 institutions of higher education, with 8,908 teaching faculty and 103,515 students.

During the last few years the number of scientific workers in the area of technological sciences has risen sharply. This represents a valuable step for the closer linkage of the achievements of the scientific and technological revolution with the advantages of the socialist social order.

Without underrating basic research, in which Bulgarian scientists have important achievements and a strong tradition, importance is now given to applied research and development with a view to improving the scientific servicing of production, the development of new technologies and engineering products, the development of new products in the fields of machine building electronics, the chemical industry, raw material utilization, the development of energetics, etc. A number of scientific centers and institutes were set up at production enterprises and economic organizations to service production needs directly, although these institutes and scientific centers operate closely with the scientific links of the Academy and with the respective institutions of higher education.

During the period of 1948–1973, new aspects were introduced into the orga-

nization and management of scientific activities. Those in charge are responsible for the technological level and the quality of production, the introduction of the scientific and technological achievements into practice, and their design. These bodies are particularly responsible for the utilization of purchased foreign and Bulgarian designs, solutions, licenses, documentations, samples and models, etc. They implement their activity in close integration with the organizations of the Bulgarian Academy of Sciences and the institutions of higher education, as well as with scientific organs of the other socialist countries.

Committee for Science, Technological Progress, and Higher Education

In order to achieve unity in science and technology policy, to link research and production, and to ensure higher education training, a Committee for Science, Technological Progress, and Higher Education has been created.

This important state organ shapes the policies and plans the activities in the field of science, technological development, scientific and technological collaboration, and scientific information, and is in charge of the guidance of the entire field of higher education in Bulgaria.

The Bulgarian Academy of Sciences works in close coordination with this committee, and participates in drawing-up scientific and technological plans for the management of the country. An important task of the Committee for Science, Technological Progress, and Higher Education is to keep in close contact with the State Committee for Science and Technology of the Soviet Union and with the corresponding institutions in the other socialist countries. In the last few years the process of integration with the countries of the socialist community, and the Soviet Union in particular, and the collaboration with many other countries has been gathering momentum.

International Cooperation

Since science has always been and will continue to be international, the search for and the implementation of possibilities and forms of international scientific collaboration is a vital necessity. Today, in the era of "big science," the solution of many complex and important scientific problems is beyond the powers even of the most advanced countries, because huge investments are required in research and an enormous scientific staff must be employed over long periods of time. For these reasons the cooperation of the Bulgarian Academy of Sciences with the academies of sciences of the socialist countries and with the academies and the other scientific bodies in other countries, such as USA, England, France, etc., is being intensified. The Bulgarian Academy of Sciences has established contractual relations and a regulated collaboration with the academies of sciences of the Soviet Union and the individual Soviet republics, the Polish People's Republic, CSSR, the Hungarian People's Republic, the German Democratic Republic, the Socialist Republic of Rumania, the People's Democratic Republic of Korea, the Mongolian People's Republic, and with higher scientific bodies in the Socialist Federative Republic of Yugoslavia, as well as with the academies of USA, England, France, and Italy.

The Bulgarian Academy of Sciences plays an active part in the work of the Dubna United Institute of Nuclear Research, the International Low Temperatures and Magnetic Fields Laboratory, in Wroclaw (Poland), the Warsaw International Mathematical Centre, etc., and also in the complex programs of the Council for Mutual Economic Aid, Intercosmos, etc.

Since 1970 the Bulgarian Academy of Sciences has concluded an agreement for scientific collaboration with the National Academy of the United States, which provides for an annual exchange of scientific workers for a maximum of a total of 20 months for each country. So far the Bulgarian Academy of Sciences has availed itself of this opportunity mainly for problems of interest to Bulgaria.

In 1972 a new and interesting form of collaboration was attempted for the first time. Bilateral colloquia were organized on topics of interest to both countries. The

first such colloquium was held in Varna, in June 1972, on the problems of scientific policy. The experience which we have gained leads us to believe that similar gatherings will provide a valuable source of scientific information.

During the above colloquium the representatives of the U.S. National Academy expressed the desire to discuss the possibilities for a concrete collaboration on problems of mutual interest, such as the problems of the natural and social environment, transport, farming, medicine, industry, computerization technique, natural resources, etc. It was suggested that a joint committee of representatives of two or three members of the leading bodies of both academies be established. This committee would be asked to prepare a program for further concrete scientific collaboration, and also to guide and appraise the work of the periodic meetings. The suggestions of this committee would be approved by the boards of the two academies.

Undoubtedly the organization of joint research projects with the participation of teams of scientific workers from both countries would be an effective form of collaboration which, if it is adequately used, can help a great deal in the development and acceleration of scientific achievements in a given field.

Scientific collectives of both countries have more concretely started the elaboration of the following themes:

- application of computerization technique in management, system analysis, and mathematical guarantee;
- structural and physico-chemical conditions for the formation of hydrothermal ore deposits;
- strong seismic motions and interaction of the foundation and the equipment in seismic effects;
- ultraviolet electronic siectroscopy;
- programming the yields of the major crops, etc.

The aid which the Soviet Union has extended to Bulgaria in the form of the admission of young Bulgarian scientific workers for training in Soviet institutions of higher education has been of major importance for the development of Bulgarian science during the last 15 or 20 years. More than 6,000 Bulgarian specialists have pursued post-graduate studies in Soviet institutions of higher education, and more than 5,000 have obtained their higher education in Soviet universities.

Recently, in connection with the rapidly developing scientific and technological revolution, the scientific front in Bulgaria directs more attention to problems related to the life, labor, and education of man and particularly to the economic changes in society and in social consciousness, the protection and improvement of man's natural and social environment, the protection of his health, the rational utilization of natural resources, etc. In this way Bulgarian scientists endeavor to give their modest contribution to the development of world science.

Organization of Special Libraries

The flourishing of science and culture in the People's Republic of Bulgaria and the setting up of a number of research institutes at the Bulgarian Academy of Sciences, the ministries, the various boards, the universities and academies, provoked the creation of many special libraries, which at present number about 1,500 and employ more than 10,000 highly skilled persons.

They are primarily responsible for providing literature to the workers of the boards and institutions of which they are a part. The special libraries in the People's Republic of Bulgaria form sectional networks for the sake of greater unity and mutual coordination. Among these networks of libraries, the most important ones are as follows.

1. The network of special technical libraries at the Committee for Science, Technological Progress, and Higher Education. This network, which is headed by the Central Technical Library, includes all the libraries at the boards and institutes of the field of industry, construction, transport, and communications.

2. The network of special libraries at the Bulgarian Academy of Sciences, with

43 special libraries at the various institutes, laboratories, and subdivisions of the Academy, plays an important part in the country's scientific and cultural life. The activity of these libraries is determined principally by the fact that they are specialized libraries at the supreme, complex scientific organization in the country, the Bulgarian Academy of Sciences. The functional structure, the well-organized central acquisitions, the central cataloging, the bibliographical and methodical activity of the Central Library confirm the theoretical and practical importance and the international character of Lenin's doctrine of the centralization of librarianship.

3. Another network of libraries is that under the Central Farming Library, which comprises some 62 specialized libraries at the farming institutes, laboratories, development centers, experimental stations, etc. The Central Farming Library operates under the guidance of the Centre for Scientific Information on Farming.

The work in the People's Republic of Bulgaria in education and training of highly qualified workers determines the tasks and scales of library and bibliographical servicing of students, teachers, and professors. To that end a whole network of university libraries exists, which is expanding as the opening of new institutions of higher education proceeds.

A characteristic peculiarity of the libraries at the institutions of higher education is that they constitute systems of libraries with a branch structure, in which the branch libraries are organized at the various departments and chairs of the respective institution of higher education. Under these systems, acquisitions and cataloging are done centrally by a central library, which is the bibliographical and methodical center of the respective network of libraries. The University Library at the Kliment Ohridski University in Sofia occupies a foremost place within this system. No less important is the Central Library at the Academy of Medicine in which the functions of central book depositories are performed.

Although special libraries are the youngest category in the history of librarianship in the People's Republic of Bulgaria, their role has particularly been enhanced since science has become a paramount productive force. The special libraries play a direct part in the scientific process and perform important and responsible functions related to the ensuring of the theoretical basis of research. That is why their structure, development, and problems are most closely related to the organization and problems of the scientific units which they serve.

As basic units in the system of scientific information, the special scientific libraries have as their major task to build up book stocks of specialized periodical publications, abstract publications, proceedings of scientific sessions and relating materials, monographs, reference collections, etc. which offer rapid, complete, and precise information on scientific developments, investigations, experiments, and other topics.

The special collections, such as graphic materials, cartographic materials, music, dissertations, licenses, standards, trade catalogs, preprints, gramophone records, magnetic recordings, microfilms, disfilms, unpublished documents, etc., are growing constantly. Specialized, coordinated, and centralized acquisition is a basic premise. International book exchange plays an important part in developing the collections of the Bulgarian Academy of Sciences. The Academy's Central Library participates in exchange agreements on behalf of all institutes at the Academy. In that way the Bulgarian Academy of Sciences obtains valuable materials, which it would be unable to acquire otherwise.

The more complex the character of science under the impact of the scientific and technological revolution, the more necessary becomes the close collaboration between the libraries and the various information units. This is an important condition for the adequate development of information activity. The coordination in this respect is carried out on a high scientific level.

The activity of the special libraries is most efficient when it develops in a close

connection with the organs of scientific and technical information and the general libraries. The information that they provide, through the formation of the special collections and the organization of special rooms with literature for immediate information, creates the bibliographical basis for fact-finding information.

In view of the role and importance of information in the conditions of contemporary science, the usefulness of these libraries is most apparent. Bulgaria has become a mighty planned force which purposefully changes all fields of the nation's intellectual and material life.

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Commentary on
Knox, NTIS and Special Libraries

PERHAPS I never should have given a careful reading to William Knox's article on "Special Libraries and NTIS" [*Special Libraries* 67(no.1):45–48 (Jan 1976)]. After all, isn't reading the *New York Times* sufficient? Who needs additional aggravation? Haven't we had a surfeit of examples of bureaucratic distortion and misinterpretation of Federal statutes? Mr. Knox's article, however, is too important to be ignored. The views of the director of as powerful an agency as NTIS are of sufficient national interest and wield sufficient professional impact to warrant careful scrutiny and a modicum of reality testing. Certainly, more than a brief rejoinder is required to deal effectively with the various allusions, distorted analogies, and, as they are currently interpreted, the shortsighted, declared and implied NTIS information dissemination policies and practices. For the present, it must suffice to deal only with the more flagrant and pressing assertions communicated to the SLA membership in Knox's article.

In discussing NTIS funding, Knox states: "The Congress has indicated [15 U.S.C. 1151-7] that 'each of the [NTIS] services and functions provided herein shall be self-sustaining or self-liquidating to the fullest extent feasible.' " This unequivocal assertion has been publicized by Knox (and his staff) at many a national association meeting and disseminated in a variety of publications, including NTIS brochures. A reading of 15 U.S.C. 1151-7 reveals that the statute is not at all as unequivocal as is indicated in Knox's "quotation." Section 3 of 15 U.S.C. 1151-7 reads as follows: "It is the policy of this Act, to the fullest extent feasible *and consistent with the objectives of this Act,* that each of the services and functions provided herein shall be self-sustaining or self-liquidating . . ." [emphasis added].

Is there a valid reason for Mr. Knox to omit or ignore the phrase "consistent with the objectives of this Act?" What did Congress mean by that phrase? In seeking the enactment of the NTIS statute, was there a clearly articulated congressional intent to create a fully self-sustaining federal agency, or was there a broader, more fundamental objective to provide a vital information service for the American public which may, or may not be, fully self-sustaining?

The Intent

An indication of congressional intent may be derived through an examination of pertinent NTIS congressional hearings, committee reports and, of course, through an examination and analysis of the language of the NTIS Act itself. Having conducted in May 1947 six days of hearings on S. 493 (Technical Information and Services Act), the precursor of NTIS' enabling legislation, in its report, the Senate Committee on Expenditures in the Executive Departments (S. Report No. 395, 80th Cong., 1st sess.) reveals the following with respect to the anticipated "cost of the (NTIS) bill": "The Committee has reviewed this phase of the proposed legislation with particular care, and has simplified and classified the provisions which will make the bill *to a considerable extent self-sustaining* in the form of fees for publications and information services" [emphasis added]. Moreover, Section 3 of U.S.C.

1151-7, quoted by Knox, and containing the phrase "consistent with the objectives of this Act," also contains the following language: ". . . *nothing herein shall be construed to require the levying of fees or charges for services performed or publications furnished to any agency or instrumentality of the Federal government, or for publications which are distributed pursuant to reciprocal arrangements for the exchange of information or which are otherwise issued primarily for the general benefit of the public*" [emphasis added].

Additionally, before the final House vote on the NTIS statute embodying the language of Section 3 of U.S.C. 1151-7 (*Congressional Record,* Aug 28, 1950, p. 13634), Representative John W. Heselton of Massachusetts noted: "The latter part of that particular paragraph does point out that there are some services in both the agencies and the instrumentalities of the Federal Government that might well be carried on where the general public is benefitted, and it is my understanding that that is the reason for the use of the words, 'feasible and consistent with the objectives of this act.' " In citing the phrase: ". . . the general public shall not bear the cost of publications and other services which are for the special use and benefit of private groups and individuals," Knox ignores the meaning of the use of the word *special* and the subsequent and prior language of the statute which negates his interpretation of a completely self-sustaining NTIS agency.

Thus, notwithstanding the statutory language and expressed congressional intent of Section 3 of U.S.C. 1151-7, Knox seeks our acquiescence or, worse, our approval by revealing that "NTIS' predecessor organizations were unwilling or unable to strive to become completely self-sustaining, but NTIS is not, because the organization is convinced that its products and services are worth more than even the current prices." Worth more to whom? To individuals or public and private institutions that cannot afford the purchase of NTIS products and services even at current prices? OMB and other Executive branch "entities" notwithstanding, is a federal agency to base its document dissemination policy on misinterpretation of legislative intent and statutory authority?

Governed by a subjective philosophy which seeks a completely self-sustaining NTIS operation, it would follow that Knox would find

it somewhat disturbing that "some groups are pushing strongly to have the Federal Treasury subsidize the library's collection of information products, *as determined by the librarian* . . . [emphasis added]. Who, but the librarian, should be held responsible for determining a library's collection? Is not a library's acquisition policy governed not only by the immediate and expressed user needs, but also by a professional assessment of the *potential* needs of a library's clientele? Is "subsidy" for government document dissemination, like "detente" for U.S. foreign policy, to become henceforth a dirty word within the Federal government bureaucracy? Is the full and corporate-like imposition of user charges, as advocated by Knox, to become the new panacea for our information-dependent post-industrial society—the great new boon for facilitating information transfer activities? In its recently published report (*Especially DDC; Users Look at the DoD Information Process;* AD-A005 400), the Committee on Information Hang-Ups notes the following with respect to user charges: "Without any question, user charges have effectively lessened the flow of Government information to libraries and users—especially the peripheral kind of information that promotes professional development, stimulates new ideas and is the leading edge of tomorrow's research and development. This is the true impact of user charges, and its effect on Defense R&D is incalculable."

The Results

While Knox and his staff can calculate and bask happily in the almost self-sustaining income currently derived by NTIS through the imposition of user charges, has any federal official calculated the losses accruing to the federal government and this nation resulting

from NTIS's *not* indexing, processing or announcing thousands of documents which rightfully fall within its statutory mandate? Since poverty and economic decline have often been defined in terms of lack of access to information, has any government official quantified the real economic and other intangible losses accruing from NTIS' "self-sustaining" pricing policy for its products and services? What are the information transfer losses accruing, e.g., from NTIS' imposition of a $40 processing fee, levied against each agency and instrumentality of the federal government, for each and every research report indexed and distributed by the NTIS facility? Published statements indicate that about 4,000 reports, funded in part by the U.S. Department of Housing and Urban Development (HUD), are issued annually under the Comprehensive Planning Assistance Program ("701" Reports). Although forwarded by HUD to NTIS, the reports have not undergone processing and announcement by NTIS because HUD, regretfully, had insufficient funds to cover the NTIS report processing costs. A similar fate befell the Urban Observatory Reports, sponsored by HUD and the National League of Cities, dealing with such subjects as municipal finance, urban, social and economic indicators, manpower planning, and similar topics. Was a bleak assessment of NTIS' income potential the determining factor in the decision not to index and announce in GRA/GRI the bulk of the many thousands of older, formerly security-classified or "limited distribution" reports which have been declassified and released to NTIS by the Defense Documentation Center? Did a similar philosophy govern past decisions to process and store AFOSR reports, not at NTIS, but at the Library of Congress, or to send W. W. II German technical documents to the Smithsonian Institution rather than cataloging and servicing these documents through NTIS? Did a preoccupation with "income" prompt NTIS to seek the avoidance of GPO depository library distribution for printed NTIS documents? Is avoidance of such distribution in the interest of the general public and in conformance with the NTIS statutory mandate?

Knox states: "Special libraries and NTIS have a natural community of interest defined by the word 'special'. . . . The 'special' nature of our missions derives from the role in decision making in the adult working community. The functions of specialized libraries and NTIS are to support practitioners at work with the information they need. . . ." Again, Knox states: "The Congress recognized from the outset that NTIS was an activity to satisfy the practitioner's need for special information for practical purposes." Again, the refrain: "NTIS performs for its user clients, these practitioners, a service . . . ." Where in the NTIS statutory legislation does one find the use of the term "practitioner," or the target clientele to be "practitioners at work," or the NTIS aim to be the dissemination of information for "practical purposes." Is it that a "practitioner at work," i.e., those who make use of "special information for practical purposes" have the funds to pay for the NTIS products and services, whereas graduate students, senior citizens, philosophers, urban planners, unemployed engineers, university professors, or many a government employee, often, not being very "practical," do not have such funds?

In Conclusion

Yes, what, indeed, are the objectives of NTIS? For whom were the NTIS information services intended? What is the mandated scope and mission for all of the NTIS' activities? Are NTIS services and products to be restricted to an affluent and narrowly defined group of business and industrial users, or are they to be made available, not only to business and industry, but also to the U.S. public at large?

Section 1 of 15 U.S.C. 1151-7 reads as follows: ". . . the purpose of this Act is to make the results of technological research and development more readily available to *industry and business and to the general public* . . ." [emphasis added]. Subsequent Section 2 (a) further specifies and authorizes the Secretary of Commerce "to search for, collect, classify, coordinate, integrate, record, *and catalog such information from whatever sources, foreign and domestic, that may be available,*" and, in Section 2 (b), "to make such information available to *industry and business, to State and local governments, to other agencies of the Federal Government, and to the general public*. . . ." How does this broad statutory mandate to organize and make available domestic and foreign documentary resources to the entire American community compare with the selective NTIS document processing activities and the restrictive interpretation of

its statute to provide NTIS information services and products only to a circumscribed group of "practitioners?" Obviously, a discrepancy exists between the language of the statute and the NTIS administrative philosophy and practice. I detect a note of wistfulness in Knox's admission that at present NTIS' "capital costs are still paid by appropriated funds." It would be a capital and most beneficial idea if Knox were to re-examine the NTIS enabling legislation and reconsider its true legislative intent.

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sla news

CHAPTERS & DIVISIONS

Baltimore—On Feb 18, Joseph Price, Serial Records Division, Library of Congress, spoke on the National Serials Data Program which is a plan for serials control designed to facilitate access and use. Earlier in February a tour of the Enoch Pratt Free Library, George Peabody Department was arranged.

Another library tour was held Mar 6. The Ludenberg Maryland Seamanship School Library was visited. The highlights of the SLA Chapter and Division Cabinets and the Board of Directors meetings were presented, along with a slide-narrative program on SLA, at the March Chapter meeting.

The "Multi-faceted World of Music at the Library of Congress" was explored by Donald Leavitt at the April meeting.

In May the Chapter Annual Business Meeting was held, followed by a program on union list design and implementation.

Boston—The January Chapter Meeting was a "nuts and bolts" session on how to run a library well.

On Feb 11, 130 SLA members and guests visited the *Boston Globe* plant and library.

In March a day-long government publications workshop was held with 150 attendants. William Barrett, Deputy Assistant Public Printer at the GPO, gave the opening remarks. Four sessions were held on basic reference tools, federal and state publications.

Cincinnati—On Mar 3 the annual joint meeting was held with the Southern Ohio Chapter of the American Society for Information Science. The topic of the afternoon was the "Copyright Controversy." Joan Titley Adams, the Medical Library Association's representative to the Conference on the Resolution of Copyright Issues, spoke.

The Annual Business Meeting was held in May.

Cleveland—The Methods Update/Review parts two and three on programming and feedback, respectively, were held in February and March.

The Fourth Betty Burrows seminar was held Apr 9. The all-day session was comprised of two workshops. The objective of the seminar was to address the subject of meshing the goals of librarians with the goals of the organizations they serve and specifically to gain techniques to serve this purpose.

Colorado—A business meeting was held on Feb 18, at the Colorado Mountain Club in Denver. The speaker was James Grady, Department of Anthropology, University of Colorado, who addressed the Chapter on the discovery, exploration, and settlement of the New World.

On Mar 17 the Topic was "Library Related Satellite Communications." Margaret Goggin, chairman, SALINET Consortium Board, explained the SALINET project and its objectives.

Connecticut Valley—In February "Perspectives on the History of Connecticut and Federal Documents" was the topic for a meeting at Connecticut Historical Society in Hartford.

A day-long workshop was held Apr 8 on the topic of "Microfilm, Microfiche, and Tapes." It was geared to the novice and included such aspects as selection of equipment and materials and their use.

Dayton—A. Chapman Parsons, executive director, Ohio Library Trustees Association spoke at the Chapter meeting in March on "Current Legislation Concerning Ohio Libraries."

Miriam Tees visited the Chapter and addressed a dinner meeting on April 26.

The Annual Continuing Education Seminar was held in May. The topic this year was new directions in library management.

Greater St. Louis—The January meeting was held at Washington University. T. John Metz gave an account of the Midwest Region Library Network.

Florida—A special meeting with bicentennial flavor convened at Disney World on Feb. 27. The papers covered a variety of subjects from alchemy to natural history.

The April luncheon meeting included a workshop session on on-line information retrieval presented by Richard Caputo, Lockheed Information Systems.

Heart of America—A joint meeting was held in January with the Health Sciences Library Group of Greater Kansas City. Jay Lentz spoke to the assembly on "Personnel Management."

The February meeting was held in the Missouri Valley Room of the Kansas City Public Library. Marjorie Kinney described the local history and geneology collection.

The March convocation was a "Survival Seminar" on increasing productivity and other hints for librarians.

The April 24 scholarship event was a silent auction which amassed a record sum from the sale of donated items.

Hudson Valley—On Mar 18 a joint meeting was held with the Library Group of Southwestern Connecticut. Marie Yanarella, a professor at Northwestern Connecticut Community College, discussed new options in staffing with paraprofessionals. J. Thomas Russell, associate director, USMA Library, then spoke about the cataloging system which has been used in the library since 1779. The last speaker, Evaline Neff, related how contractual agreements for cooperative services have helped the Rochester Research Library Council.

Illinois—William D. North, consul to the American Library Association, spoke to the Chapter in January on the status of the copyright law revision. The Chicago Library Club joined the Chapter for this discussion.

In February, Margaret Myers, director, Office of Library Personnel Resources, ALA, and vice-president of the CLENE Board, spoke about continuing education.

A "Dialogue with Management" was the topic on Mar 24. The continuing education session was arranged by the Education Committee of the Chapter.

Kentucky—"Computer-Based Library Networks and Bibliographic Data Base Search Services" were the topics of the spring workshop held Apr 29-30. The sessions included several panel discussions and a demonstration.

Long Island—The student group at the C. W. Post Campus, Long Island University, was the host for the Chapter meeting Mar 4. "Serials Records in Special and Research Libraries," "Innovations and Trends—A Demonstration," and finally, a practical applications and problems session completed the afternoon.

In April the Chapter toured the Brookhaven National Laboratory.

Louisiana—A business meeting was combined with an address by Isabella Hopkins, librarian, U.S. Geological Survey, Regional Library, discussed "Micro-reproduction, the Value and Services to Libraries." This was followed by a tour of Southern Microfilm Corp.

Michigan—A joint ASIS-SLA meeting was convened Feb 17. After dinner a panel discussed the use of OCLC as a reference or information tool rather than a cataloging tool.

Mid-Missouri—The January meeting was held at Stephens College Library. Lynn Anderson discussed the use of *Biological Abstracts.*

In March transactional analysis was the topic of a day-long workshop.

A family day was planned for May 6 with a picnic at Kiwanis Park.

Minnesota—On Jan 15 Paul Zurkowski, president, Information Industry Association, spoke on "The History of Information—Who Controls the Flow of Information?"

The March joint ASIS/SLA meeting was a panel discussion of various projects in the area.

A symposium was held Apr 8-9 in Minneapolis. The topic was planning and budgeting for change.

Montreal—The Jan 19 meeting had five speakers who presented a view of "Special Libraries through a Kaleidoscope." Various aspects of different special libraries were presented.

At the February meeting a panel discussed patents and patent literature.

The position of the library or information center within the structure of the organization which is serves was presented at the Mar 25 assembly.

A meeting was cosponsored by the Canadian Association of Information Science on networking during April.

In May another cosponsored meeting with CAIS centered on "Computerized Library Networking in Canada.

The May Annual Meeting was addressed by Mary Baxter who discussed the design and implementation problems of a communication system for the olympic games.

WASHINGTON LETTER

June 1, 1976

LC Madison Building—Crowded Already?

An expanded federal bureaucracy will be one effect of the new copyright revision bill (S. 22), assuming it is finally enacted into law later this year as expected. Another result may be that the new James Madison Memorial Building of the Library of Congress will be outgrown before it is even occupied.

The Copyright Office in the Library, which now has about 400 employees, will increase to a staff of about 700 to handle the requirements of the new law.

Deputy Librarian William Welsh told the subcommittee the Library probably will have to come back to Congress for funds for additional leased space because of this expansion. "You are going to be hard put if you come to this subcommittee requesting more space," Rep. George Shipley (D-IL) told the Library. And referring to the decision of Congress not to take over part of the new Library building for its own space needs, Shipley said "the greatest thing we had going on the Madison Building debate was that you were going to have a saving [on] . . . rented quarters. . . . So I would firmly encourage you to get the Copyright Office completely housed in the new building."

Referring to the copyright revision measure as a "heavily lobbied bill," Ms. Ringer told the subcommittee, "there were hundreds of special interest groups and organizations . . . interested in this bill." The Copyright Office staff plans to launch an educational program to let all these people know "what they are going to be expected to do under the new law." The Office is asking Congress for additional funds to hire "attorneys and others" who can not only "make the speeches" but also "write speeches for other people to make" on the subject of copyright law.

House action on the funds requested by the Library of Congress is slated for late June. The new fiscal year (FY 1977) begins Oct 1, 1976.

GPO Survey Ordered by Congress

Congress voted $300,000 for an independent management study of the Government Printing Office, to be completed by Dec 31, 1976. These funds were included in the FY 1976 second supplemental appropriations bill (PL 94-303) signed into law by President Ford on June 1.

The survey was requested by Rep. Wayne Hays (D-OH), chairman of the Joint Committee on Printing. "It is our conviction," Hays said, "that periodic decisions and improvements can be achieved, with significant cost and performance gains, during the course of the overall review project. To that end, we would consider it necessary to supplement our committee staff with a consultant and secretary who, collectively, would serve as a continuing staff intermediary liaison with the consulting firm for the duration of its contract which we would not envision lasting beyond six months."

Museums

Headed for a possible presidential veto is a new program of federal assistance to museums. The new museum program is part of the Arts, Humanities, and Cultural Affairs Act (HR 12838) which passed both House and Senate earlier this spring.

Both House and Senate versions of the bill would create a new Institute of Museum Services to provide grants and other assistance to the nation's museums, but the location of this new Institute is a bone of contention. The House bill would place the Institute within the Department of Health, Education, and Welfare, while the Senate voted to place it within the National Foundation for the Arts and Humanities.

Differences between House and Senate versions of this legislation are expected to be resolved early in the summer. If President Ford should veto this measure, the veto would stand a good chance of being overriden by Congress, for there is strong bipartisan support for the arts and humanities on Capitol Hill.

SARA CASE
Washington, D.C.

STAFF DEVELOPMENT

Aplander, Guvenc G. and Jean E. Gutmann / Contents and Techniques of Management Development Programs for Women. *Personnel Journal* 55(no.2):76–79(Feb 1976).

The training and development needs of male and female executives are compared. Women in non-managerial positions who wish to advance in the organization need to develop their basic supervisory skills. Existing course materials must be adapted to reflect female roles and viewpoints.

Brown, Daid S. / Barriers to Successful Communication: Part 2. Microbarriers. *Management Review* 65(no.1):15–21(Jan 1976).

Microbarriers are those which have to do with the transmission, receipt and translation of specific messages between the sender and receiver. Brown identifies the more important barriers and the problems in overcoming them.

Smith, Howard R. / The Half-Loaf of Job Enrichment. *Personnel* 53(no.2):24–31(Mar–Apr. 1976).

Job enrichment is generally thought to be a workers' benefit, but workers do not always consider it to be a good bargain. Smith suggests that we should take care not to "use" people in the name of job enrichment.

Walter, Verne / Self-Motivated Personal Career Planning: A Breakthrough in Human Resource Management. *Personnel Journal* 55(no.3):112–115,136 (Mar 1976).

Walter discusses the major barriers which block the discovery and development of productive talent and which hinder effective employee career management. He describes an employee-centered program which he believes to be more effective than the manager-centered approaches.

Drucker, Peter F. / What Results Should you Expect? A Users' Guide to MBO. *Public Administration Review* 36(no.1):12–19(Jan–Feb 1976).

Drucker defines two sets of specifications for the successful implementation of Management by Objectives: One spells out the results to be expected in terms of objectives and the other for the results in terms of management.

Olsen, Leif O. and Addison C. Bennett / Performance Appraisal: Management Technique or Social Process? Part 2. Social Process. *Management Review* 65(no.1):22–28 (Jan 1976).

Knowledge of the social process within an organization is vital in order for a manager to operate successfully. Performance appraisal is discussed as a part of these social processes and the roles of the employee and the manager are redefined.

Giblin, Edward J. / Motivating Employees: A Closer Look. *Personnel Journal* 55 (no.2):68–71, 84–85(Feb 1976).

The author asks a number of questions such as: "Do we really need to motivate employees?" "How motivated do employees really have to be?" "Do organizations really try to motivate their employees?"He makes the assumption that employees are already motivated and offers some observations on how we can help improve their performance.

Goodale, James G. / Tailoring the Selection Interview to the Job. *Personnel Journal* 55(no.2):62–65,83(Feb 1976).

Research shows that the selection interview as presently constructed has not been successful in predicting job performance. Goodale describes a procedure which he believes will improve the reliability of the interview and involves the mitigation of perceptual bias.

Thorne, Edward H. and Jean L. Marshall / Managerial Skills Development: An Experience in Program Design. *Personnel Journal* 55(no.1):15–17,38(Jan. 1976).

The authors describe the designing process for a Managerial Skills Development Program. The emphasis is on building an educative environment through the use of an adult-education model. A program schedule for thirteen weeks is included.

Burton, Gene E. / Put MBO to Work for Manpower Training. *Personnel* 53(no.2):55–60 (Mar-Apr 1976).

Many firms are discovering that their training programs are outdated and in need of revision. Burton outlines a manpower management model involving objective and specific action and results.

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COMING EVENTS

Aug 6–7. Developing Patterns in Interlibrary Communication, Workshop . . . University of California, Santa Cruz.

Aug 15–19. Recent Developments in Library Research in Britain, Seminar . . . St. John's College, University of Cambridge. Write: J. L. Schofield, Assistant Director of Research, Library Management Research Unit, University of Cambridge, West Road, Cambridge CB3 9DR, Great Britain.

Aug 17–20. Institute on Management for Librarians . . . Asilomar State Park, Monterey Peninsula, Calif. Sponsored by the Division of Education, Medical Library Association. The principles of market analysis, program development, and organizational analysis. Write: Division of Education, Medical Library Association, 919 N. Michigan Ave., Chicago, Ill. 60611.

Aug 27–29. National Association of Public Data Users, Conference . . . Peachtree Hotel, Atlanta, Ga. Write: Linda Morrison, P.O. Box 9287, Rosslyn Station, Arlington, Va. 22209.

Aug 27–Sep 2. Urban and Regional Information Systems Association, 14th Annual Conference . . . Atlanta, Ga. Theme: Information Systems as Services to Citizens. Write: URISA, c/o MFOA, 1313 East 60th St., Chicago, Ill. 60637.

Sep 6–10. The Library Association, National Conference . . . Scarborough, United Kingdom. Write: Secretary, The Library Association, 7 Ridgmount St., London WC1E 7AE.

Sep 9–12. Oral History Association, 11th National Workshop and Colloquium . . . Ottawa and Montebello, Canada. Write: Ronald E. Marcello, P.O. Box 13734, N.T. Station, North Texas State University, Denton, Texas 76203.

Sep 20–23. Aslib 50th Annual Conference . . . University of Exeter, England. Theme: The Effective Organization of Information Services.

Sep 20–Oct 1. 38th International Federation for Documentation Conference and Congress . . . Mexico City. Theme: Information and Development. Contact: FID and CONACYT, Insurgentes Sur 1677, Mexico 20 D.F., Mexico.

Sep 26–30. European Centenary Seminar on Dewey Decimal Classification . . . Bradbury, Great Britain. Sponsor: The Library Association, 7 Ridgmount Street, London WC1E 7AE, Great Britain.

Sep 27–Oct 1. 1976 International Council on Archives Congress . . . Washington, D.C. Theme: ICA '76, National Archives and Records Service, Washington, D.C. 20408.

Sep 30–Oct 2. Arizona State Librarians, 50th Annual Conference . . . Braniff Hotel and Tucson Community Center, Tucson, Ariz. Theme: Visions '76. Contact: Dr. Helen Gothberg, Graduate Library School, University of Arizona, Tucson, Ariz. 85719.

Future Meetings

1977

Jan 23–29. ALA Midwinter Meeting . . . Palmer House, Chicago.

Jan 27–29. SLA Winter Meeting . . . Washington Plaza, Seattle, Wash.

Apr 17–23. National Library Week.

May 3–6. Information Systems and Networks, Third European Congress . . . Luxembourg. Theme: Overcoming the Language Barrier. Abstracts for papers are due Sep 1, 1976, and should be sent to Loll Rolling, Information Management (X111-B), Commission of the European Communities, European Centre, Luxembourg.

Jun 5–9. SLA, 68th Annual Conference . . . New York Hilton, New York City.

Jun 12–16. Medical Library Association, 76th Annual Meeting . . . Washington Plaza Hotel, Seattle, Wash.

Jun 19–25. ALA Annual Conference . . . Detroit.

Jun 26–30. American Association of Law Libraries . . . Four Seasons-Sheraton Hotel, Toronto, Ont.

Aug 8–12. International Federation for Information Processing Congress . . . Toronto, Canada. The deadline for papers is Nov 15, 1976. Send papers to the Program Committee for IFIP Congress 77, IFIP Foundation, Paulus Foundation, Paulus Potterstraat 40, Amsterdam 1007, Netherlands.

Sep 20–23. Aslib, 51st Annual Conference . . . University of Lancaster, England.

Oct 13–15. SLA, Board of Directors . . . Gramercy Park Hotel, New York City.

1978

Jan 22–28. ALA, Midwinter Meeting . . . Palmer House, Chicago.

Feb 2–4. SLA, Winter Meeting . . . Indianapolis, Ind.

Apr 2–8. National Library Week.

Jun 4–8. SLA, 69th Annual Conference . . . Regency Hyatt House, Atlanta.

Jun 25–Jul 1. ALA, Annual Conference . . . Chicago.

1979

Jun 10–14. SLA, 70th Annual Conference . . . Hilton Hawaiian Village, Honolulu.

REVIEWS

Library and Information Services for Special Groups, Joshua I. Smith, ed. New York, Science Associates/International, 1974. $22.50. ISBN 0-8737-003-X.

This book delves into relatively unexplored territory in outlining library/media services to minority and other special groups in American culture. Isolated articles and books on one or some of these groups have appeared, at one time or another, in *Library Literature* or commercially published as separate monographs. However, it appears to be a pioneer work representing, in one volume, a panoramic view of reading and information needs of the American Indian, Appalachian white, Chicano and Mexican-American, correctional institution inmate as well as a discussion of the plight of black academic libraries and the special questions raised by developing Black Studies collections.

The main point of the paper on "Library Services to American Indians" by Jane Naumer, librarian of the Institute of American Indian Art, is that American Indians show a deep-seated desire to propagate their cultural values and to determine their own destiny in the choice of reading materials.

Regional themes dominate the discussion of Appalachia with some positive findings. Mayrelee Newman, Graduate School of Library Science, University of Texas, writes a seventy page essay on the history of the peoples of the region, state and regional efforts to combat illiteracy, and the growing sophistication of library consortia and reference services designed to reach the people in the "hills and hollows." She is sympathetic to the needs of the people and acknowledges that many efforts by states and regions would not have begun without federal aid. The library personnel there face typical American problems: whether libraries should include multi-media, whether librarians should be socio-political activists, and finding an acceptable definition of each library's special public. She recommends that library services in Appalachia should continue to search for ways in which to preserve the oral tradition and meet everday life skills requirements. There are indications that among mountain people there are fewer drop-outs from school and more youth attending vocational–technical schools and community colleges.

Other papers, as mentioned earlier, follow on other groups.

The tone of the book is sober yet stimulating in its report of the state of the art in the hinterlands. The bibliographies at the end of each paper should be valuable to most readers. I recommend the book and, despite its expense, feel that it has a place in the collection of some special libraries of a humanistic character. I recommend it as personal reading for most librarians.

There is much more to ponder in what is left unsaid in this work. Has American culture forgotten its own roots? Have we grown in so many directions that we have neglected to look within ourselves for the source of our strengths? With one out of five adults "functionally incompetent" or unable to make a shopping list or read a help-wanted ad, can we

continue to drift aimlessly in the areas of adult education and creative living? The Foxfires have replaced, to some extent, official state action in Appalachia. Cultural groups and individuals determined to do "their own thing" are moving in to reclaim the land and educate their children. Will the library be in front of this column or will it run to catch up with the movement?

Blacks, Chicanos, American Indians, and prisoners may have different problems in selecting and utilizing the services of library/media centers; but as a profession, the challange has been made to us. Will we accept it?

William B. Saunders
Antioch Graduate School of Education
Philadelphia Center
Philadelphia, Pa.

Information Retrieval and Processing, by Lauren B. Doyle. Los Angeles, Melville Publishing Co., 1975. 410 p. $17.95.

This is one of the few books I have read recently I can say that I liked without making reservations or qualifications. There are so few books published in the library science and information science field which are worth reading that it is a pleasure to pick up a book that reads well and has something to say.

This book started as a revised edition of the 1963 book by Becker and Hayes entitled *Information Storage and Retrieval;* however, I would say Doyle used the Becker and Hayes book more as a foundation and wrote a completely new work.

Perhaps the portions of this book that I liked the best were the evaluations of the progress that has been made over the last ten to twenty years in information processing. Doyle has been associated with the information sciences for many years and his forte is computers rather than the traditional library. However, he writes with acumen and with knowledge about the efforts and approaches tried with some success over the last twenty years.

One of the areas not covered in this book is the minutiae of how to do practical things. It is about as theoretical as one can get in the information sciences. Most of the important papers are examined and criticized. I believe that Doyle's definition of relevance provides the reader with a sound basis for the subjectiveness of relevance judgments. Since relevance is the basis of the recall and precision ratios, Doyle does his best to explain the problems associated with the assignment of relevance as well as some of the meanings of relevance.

This is one of the best books written recently on information science and is recommended for everyone with an interest in the field. It is especially good for the beginning student who will want to learn something of the field and how it grew.

Masse Bloomfield
Hughes Aircraft Company
Culver City, Calif. 90230

PUBS

(76-064) What Happens in Library Filing? Hoffman, Herbert H. Hamden, Conn., Linnet Books, 1976. 176p. $7.50. LC 75-28187 ISBN 0-208-01557-4

Examination of the principles behind the *ALA Rules for Filing Catalog Cards.*

(76-065) Reprographic Services in Libraries: Organization and Administration. LaHood, Charles G., Jr. and Robert C. Sullivan. Chicago, American Library Assn., 1975. 74p. (LTP Publication No. 19). $4.50. LC 75-25585 ISBN 0-8389-3166-9

Discussion of general guidelines and policy considerations involved in setting up reprographic services.

(76-066) Landmarks of Library Literature, 1876–1976. Ellsworth, Dianne J. and Norman D. Stevens, eds. Metuchen, N.J., Scarecrow, 1976. 520p. $17.50. LC 75-45139. ISBN 0-8108-0899-4

Compilation of 41 reprinted articles.

(76-067) Use of Physics Literature. Coblans, Herbert, ed. Boston, Butterworths, c1975. 290p. ISBN 0-408-70709-7

Bibliographical survey of the field.

(76-068) Directory of Academic Library Consortia. 2d ed. Black, Donald V. and Carlos A. Cuadra. Santa Monica, Calif., System Development Corp., 1975. 437p. $25.00

Profiles of over 350 consortia. Consortia are indexed by activity, title, and location.

(76-069) Elements of Information Resources Policy: Library and other Information Services. Rev. ed. Oettinger, Anthony G. Cambridge, Mass., Harvard University, Program on Information Technologies and Public Policy, 1976. 217p. $8.00. ($2.25 microfiche).

Report to the National Commission on Libraries and Information Science. Available from the National Technical Information Service, NTIS number PB248309/AS.

(76-070) Annual Review of Information Science and Technology, vol. 10, 1975. Cuadra, Carlos A., ed. Washington, D.C., American Society for Information Science, c1975. 476p. $27.50 ($22.00 ASIS members, $24.75 ASIS affiliates). LC 66-25096 ISBN 0-87715-210-1

(76-071) How to Organize and Operate a Small Library. Bernhard, Genore H. Fort Atkinson, Wisc., Highsmith Co., c1975. 47p.

Geared to those unfamiliar with library work. Available from: The Highsmith Co., Inc., Box 25, Fort Atkinson, Wisc. 53538.

(76-072) International Guide to Library, Archival, and Information Science Associations. Fang, Josephine Riss and Alice H. Songe. New York, Bowker, 1976. 354p. $15.00. LC 76-2700 ISBN 0-8352-0847-8

Guide to 361 associations located in 101 countries.

(76-073) Information Retrieval, British & American, 1876–1976. Metcalfe, John. Metuchen, N.J., Scarecrow, 1976. 243p. $10.00. LC 75-29154 ISBN 0-8108-0875-7

History of cataloging, classification and indexing.

(76-074) Rare Book Librarianship. Cave, Roderick. Hamden, Conn., Linnet Books, c1976. 168p. $10.00. LC 75-29045 ISBN 0-208-01360-1

Discussion of several facets of rare book librarianship.

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MARCFICHE—The least expensive and most up-to-date source of cataloging. MARC Research, Box 40035, Washington, D.C. 20016.

Japanese Translations—Into English of technical articles and patents. Free brochure. Thomas Wilds, 16D Weavers Hill, Greenwich, Conn. 06830. (212) 986-2515.

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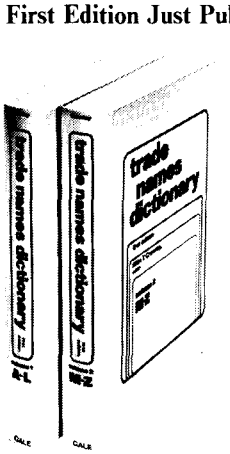

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